

WORKBENCH

35c / MAY-JUNE / 1962

ICD



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Cutting Plywood Panels**

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all purpose ... HOME! SHOP! FARM! 49-PC. Precision WORKSHOP

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5 PROFESSIONAL TOOLS
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MOST POWERFUL
2.6 AMP. 1/4 H.P. POWER UNIT

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COMPLETE

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PORTABLE
POWER SAW

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GRINDER-SANDER-
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FULL SIZE
DRILL PRESS

HEAVY DUTY
BENCH SAW
BLADE TILTS
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FOR ALL DADO CUTS

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This professional workshop manufactured to rigid standards of quality and craftsmanship. Every piece is absolutely guaranteed to be free from defects in manufacture and workmanship. Written guarantee included in each set.

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POWER DRILL

JACOBS GEARED
CHUCK and KEY

THESE 4
FREE! ATTACHMENTS



SHARPENER
Keeps tools sharp.

WOOD & METAL CUTTING HOLESAWS!
These Holesaws drill and saw ANY shape hole.

Circle Cutter
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Construction! ... Jacobs Geared Chuck and Key ... Tilting-Top Saw Attachment ... Crosscut and Rip Saw Blade ... Sturdy metal Horizontal Bench Stand ... 3-piece Drill Press, Mounting Post & Base ... Steel Saw Table with Protractor & Mounting Post ... Lamb's Wool Polishing Bonnet ... Rubber Backing Pad ... Seven Drill Bits for wood and metal ... All-purpose Paint Mixer ... 3 Mounted Grinding Wheels ... Six coarse Sanding Discs ... Six fine Sanding Discs ... Eight-piece Adapter Set.

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Please send me your Big 49-Pc. WORKSHOP which includes the 4 extra attachments FREE!

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ADDRESS _____

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☐ I enclose total of \$27.95. ☐ Send C.O.D. \$5.00 deposit enclosed.

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Start at home in spare time with this little table top machine

The multi-million dollar Rubber Stamp Business—once controlled by a few big companies—is now being taken over by small home operators—one in each community throughout the U.S. Men and women who have this inexpensive machine can turn out huge quantities of Rubber Stamps with special wording that buyers once were forced to order from big cities. Material costing only 27c makes a stamp that sells for \$1.80. The machine that does the work is simple and easy to operate and it turns out as many as six Rubber Stamps at a time each with different wording such as names, addresses, notices, stock numbers, prices and other "copy" needed by offices, factories and individuals.* Working full capacity, it can earn as much as \$9.20 an hour for the operator! Now you can get into the big-pay business yourself, with your own home as headquarters. You don't need any experience. We supply everything, including complete instructions and eight ways to get business coming in fast. Start making up to \$9.20 an hour from the very beginning. Cash in on the profitable Rubber Stamp business in your community right away.



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SQUARE FEET
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● Read the complete and fascinating Rubber Stamp-story in a big 110-page Book. Learn how we even help finance your start. The Book is profusely illustrated with more than 100 pictures and photographs. And you can read it for a full two weeks without risking a penny of your own money!

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Read This Plan for Two Weeks
ENTIRELY AT MY RISK!**

In this amazing Plan you will find exact and detailed instructions for starting a Home Business in spare time—without giving up your present job and without risking the loss of a single pay check. The Warner Plan shows you—with pictures, photographs and drawings—just how to make Rubber Stamps just as good as those turned out by the big companies. It shows how to get orders without canvassing or house-to-house selling. It shows you how to expand, how to get others to work for you and how to be SURE of at least twice the money you make on your present job for a life of personal independence.

But don't make any decision now. Read the Plan first—entirely at my risk. Then—after you have made a careful investigation—after you have talked things over with your family—only then do you decide what you want to do.

The thing to do now is to get full details which I'll send you FREE. No salesman will call to urge you to buy anything. Mail coupon today—or just send a postcard—and I'll see that complete information goes out to you by return mail—postpaid.

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Tell Me Where to
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COUPON

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1512 Jarvis Avenue, Chicago 26, Illinois**

Please rush full particulars. Tell me about your financing plan and about the little machine that can get me started in the profitable Rubber Stamp Business at home in spare time. Everything you mail me is FREE. No salesman will call.

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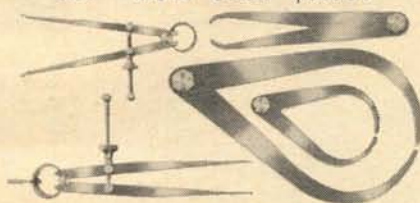
Here's what the new WARNER PLAN Tells You about Making Money with RUBBER STAMPS

1. **HOW TO** have fun **now** and at the same time provide for a secure and prosperous **future**.
2. **HOW TO** check the advantages of operating a Rubber Stamp Business in your own community.
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4. **HOW TO** visualize the scope of the Rubber Stamp market.
5. **HOW TO** make a Rubber Stamp (general outline).
6. **HOW TO** assess the value of Warner Equipment.
7. **HOW TO** get acquainted with the "Tools of your Trade."
8. **HOW TO** make a Rubber Stamp (Specific procedure).
9. **HOW TO** mount a vulcanized Rubber Stamp.
10. **HOW TO** make "Special" Rubber Stamps.
11. **HOW TO** cut plastic Matrix Board for the chase.
12. **HOW TO** get the right price for the Rubber stamps you make.
13. **HOW TO** price your complete Rubber Stamp Line.
14. **HOW TO** figure costs so you will be sure of a substantial profit on all the work you turn out.
15. **HOW TO** set up your workshop.
16. **HOW TO** get the most out of Warner's "Eight Tested Sources for Getting Business."
17. **HOW TO** operate at peak efficiency when **YOU ARE YOUR OWN BOSS**.
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Two unusual tool bargains for Home Craftsmen, Hobbyists, Wood Turners, Machinists, Pattern Makers, Manual Training Schools.

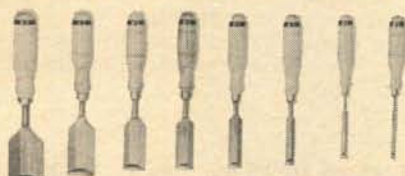
\$14.00 CALIPER & DIVIDER SET — NOW ONLY \$5.00!



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Wood chisels made of the finest **SWEDISH DROP FORGED STEEL** . . . varnished wooden handles. 8-piece set includes 1/4", 3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2" & 2" chisels. At this price—sold in sets only. Postpaid.

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HARDWARE ONLY, KIT FOR FACTORY \$11.95

FOLDS OR ERECTS IN 60 SECONDS

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WORKBENCH volume 18 number 3

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from Nelson Gallery of Art

Larry Nicholson, Photographer

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Jack Tillotson, Publisher
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G. L. Bix, Refinishing Clinic Editor
E. Le Grande, Assistant Editor
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R. Turpin, Advertising Manager
M. V. Greene, Adv. Production

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LETTERS TO THE EDITOR

Dear Mr. Hedden:

Have enjoyed the several articles on wood carving in *WORKBENCH*. Is there an organization for people interested in carving?

Mr. E. R. J., St. Augustine, Fla.

Dear Mr. E. R. J.:

Would recommend the National Wood Carver's Association. Dues are just \$1 per year, which includes a subscription to "Chip Chats" a mimeographed newsletter. This is strictly a hobby organization with no by-laws or formalities. For information write to the Secretary-Treasurer: Miss Sakae Nakata, 955½ S. Kingsley Dr., Los Angeles 6, or to the President, Clarence H. Musolf, 3034 Roxanne Ave., Long Beach 8, Calif.

Dear Mr. Hedden:

Enclosed is a photo of a chair I just finished caning, using four bunches of cane. A curious fact is that the cane in the back went through holes in the frame, the cane in the seat went through the same holes and the cross canes in the seat went through the same holes as the cane for the arms. There were eight strands of cane in almost every hole when the job was finished. Plugs had to be fitted in 528 holes and a filler strip of mahogany had to be fitted in a rabbet in the back and on the front up-rights of the arms.

The firm that furnished the cane and plugs wrote me that they had read about a similar chair, but in their thirty years in business had never seen one. The chair was bought in England, and I understand it is rather common practice to make chairs of this description. H. C. Wheeler, Winsted, Conn.



Dear Mr. Wheeler:

A nice job on a really difficult project. As you say, you used enough cane to do more than ten Hitchcock chairs. I envy your monumental patience; bet that chair won't need caning again for years.



Dear Mr. Hedden:

Enclosed is a picture of a night stand made from plans in *WORKBENCH*, (July-August, 1961), and a photo of the lady who made the project. Mrs. Duncan is a subscriber to your magazine and has been making things from wood for several years. She has her own shop in the basement of her home. Alden H. Philbrook, Rockland, Maine.



Dear Mr. Philbrook:

Thank you for sending the photos, and congratulations to Mrs. Duncan. Although the design is "contemporary," Mrs. Duncan has used maple stain and shellac for an almost Early-American finish. Proof that good design will fit with any decor.

Dear Mr. Hedden:

In the July-August, 1961 issue you gave dimensions for making holders for potted plants. I have made quite a few of the 6-sided holders and they turned out very good. In place of the improvised clamping setup, (Fig. 2, page 54), I made a "clamp" from a piece of ¼ or ½-in. plywood.

Cut out one piece of wood so it fits over the holder to within about 2 in. of the large end, and another piece to fit to within about 1½ in. from the small end. Tap the "clamps" on from the small end and leave them on until the holders are banded. Fred J. Knock, Eau Claire, Wis.

Dear Mr. Knock:

Thanks for the tip. We are passing it on to our readers through this column, as you can see.

Dear Sir:

Enclosed are photos of projects I have made. One is a desk that I made for my sisters, using tips from an article on Corner Desks in the March-April, 1961 *WORKBENCH*. I like the magazine and woodworking very much and plan to become an Industrial Arts Teacher.

Robert Marko, East Pittsburgh, Pa.



Dear Mr. Marko:

The desk is an extremely attractive piece of work. If you carry your skills into teaching, your pupils will really learn woodworking.

Mr. Hedden:

Made the indoor outdoor fountain from the Jan.-Feb. issue. Eliminated one step by using Auto-Body Filler alone. Fountain is watertight, looks good.—J. E. L., Kansas City, Missouri.

Dear Mr. J. E. L.:

Several readers did as you suggested, and further experimentation by the staff showed that Body Filler alone does an excellent job.

Jay W. Hedden

Jay W. Hedden, Editor

SAVE **AS MUCH AS 80% ON** POWER TOOLS

GUARANTEED TO DO THE WORK OF \$40, \$60, \$80 UNITS

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- **UNCONDITIONAL 10-YEAR GUARANTEE**

REVOLUTIONARY PATENTS DECREASE COSTS, INCREASE EFFICIENCY. Top quality full scale power tools of heavy duty 100% cast iron and steel. Streamlined design features such as perforations on table tops reduce weight, cut material costs, cut polishing and grinding time—reduce production costs. Special patents provide added efficiency, accuracy, savings. Nothing left out but exp've gingerbread. Parts made, assembled, tested and packed in our own factories, shipped direct to you. No retail store handling or profits to add to your cost.

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**8" TILT
ARBOR
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SAW**

Complete as shown, less blade. Incl. precision mitre gauge, ground cast iron table. If desired, RIP FENCE for easier work alignment, \$3.50 add'l.

DOES THE WORK OF \$50 BENCH SAWS!

CROSS-CUTS, RIPS, BEVELS, MITRES, DADOES, CUTS COMPOUND ANGLES. Patented motor mount takes any standard 1/4 to 1/2 h.p. motor... keeps belt tight, assures perfect alignment at any angle, transmits full power. Table stays level—blade tilts, locks securely at any angle to 50°, raises, lowers 0"-2 1/4". Patented tilt mechanism has accurate etched scale. Takes standard blade, saw insert removes easily for insertion of any STANDARD dadoe heads, cutters, etc. Accessories, table extensions, when wanted, at factory prices. Versatile, rugged performance proven by almost a half-million users.

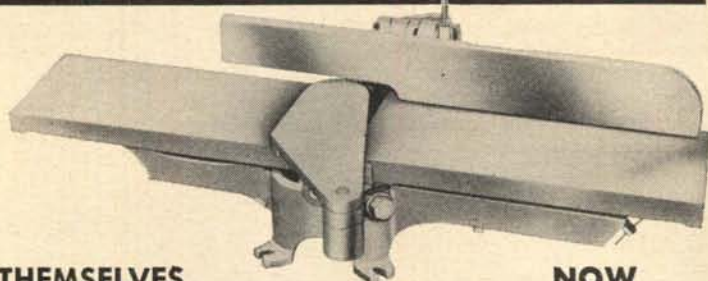
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DOES THE WORK OF \$60 UNITS

Now, at little more than a hand tool price, a guaranteed professional quality precision machine which does same work as skilled hand planing... much faster, more accurately. Make accurate glue joints; rabbeting cuts for doors, window frames, table drawers; square taper cuts for chair legs; extremely accurate beveling. Helps amateurs produce quality work—with the sweat eliminated.

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- Precision ground cast iron tables, adjustable for depth of cut • Rigid cast iron base • New patent-pending design holds clearance between knives and tables at any depth • Rabbet depth 3/8" • Hardened, ground high speed steel knives • Patent-pending fence adjustable to any position, any angle 0°-50° • Patent pending lift-off guard (nothing to loosen!) • Balanced steel cutter head. **UNCONDITIONAL 10-YEAR GUARANTEE.**



FULL 22" LONG, 4 1/8"
JOINTER-PLANER

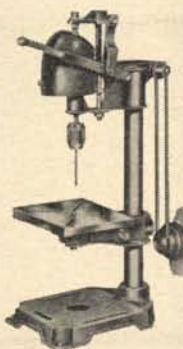
**NOW
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DRILLS TO CENTER OF 10" CIRCLE—Rugged, dependable... all cast iron and steel. Table to 1/2" handtite chuck: max. 13 1/2". Spindle has combination ball and bronze bearings. Adjustable stop for repetitive drilling. Precision ground cast iron table. Table assembly fully adjustable on column. **UNCONDITIONAL 10 YEAR GUARANTEE.**

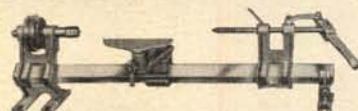


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Wt. 32 lbs.
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3-FT. LATHE**

\$985

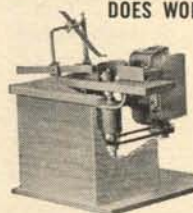


DOES THE WORK OF \$40 UNITS—This sturdy all cast iron power tool will turn wood or plastics with the precision and speed of machines selling for 4 times as much. Has tubular steel bed, ball thrust cup center, spur center. T-Rest assembly, lever action tail stock. 2 speed pulley. Fits any motor. Perfect for the home or professional workshop, garage or farm. **UNCONDITIONAL 10 YEAR GUARANTEE.**

Optional Faceplate for turning bowls, trays, lamp bases, rosettes, etc. **\$250**

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Makes decorator edges on furniture, forms beads, coves, moldings, tongue-in-groove joints, etc. A-B-C plans make assembly a breeze. Everything incl. but plywood for table, skirt. Greased-for-life

ball bearings in sealed cast iron housing; fully adjustable, easily accessible cutter height control, fence assembly. Precision-machined for smooth, accurate cuts at high speed. Takes 1/4 h.p. or larger motor; standard cutters avail. at Sears, other retailers.

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Exp. Coll. **\$1495** Complete less wood parts, motor

MAIL COUPON TODAY!

American Machine & Tool Co., Dept. W-52, Royersford, Pa.

Please send me the unit—checked. Payment in full enclosed \$ or \$3 deposit each item enclosed, balance C.O.D. ☐ I must be fully satisfied or will return unit within 10 days for full refund. No questions asked.

☐ Jointer-Planer \$19.95

☐ 8" Saw \$9.95

☐ 8" Saw & Rip Fence \$13.45

☐ Drill Press \$19.95

☐ Lathe \$9.85

☐ Lathe & Faceplate \$12.35

☐ Shaper Kit \$14.95

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CITY

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(please print)

30 DAY MONEY BACK GUARANTEE

You must be satisfied or money refunded, no questions asked.

AMERICAN MACHINE & TOOL COMPANY

Dept. W-52, Royersford, Pa.

PRE-FAB KITCHEN CABINETS

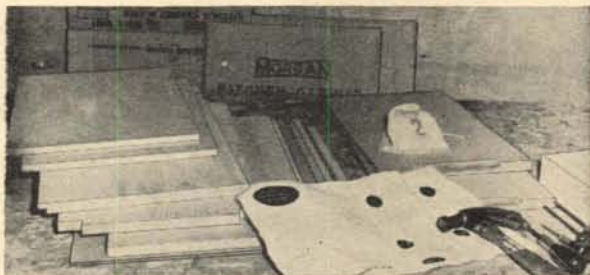
This attractive modern kitchen was assembled from pre-fab units by the homeowner. This particular kitchen is U-shape, any shape can be made.



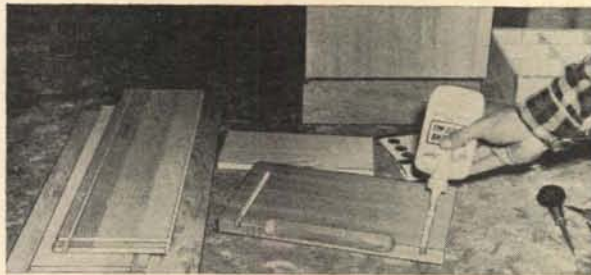
WE KNOW FROM OUR MAIL that many of our readers are remodeling their kitchens, following the instructions in our series of articles. However, there are some of you who would like to modernize your kitchen, but do not have enough time to build

the various units required. These pre-fab units may be the answer to your problem. Each cabinet comes in a carton, ready for assembly, with all necessary hardware. Complete instructions are included. Birch or Philippine mahogany,

(lauan), is available, ready for you to apply paint or a natural finish. A Kitchen Planning Kit that includes scaled cutout cards for sinks, ranges, refrigerators, etc. is available for 50 cents from Morgan Co., Adv. Dept., Oshkosh, Wis. $\Delta \Delta$



Components for wall cabinet are packed in small carton, cabinet can be assembled in about 30 minutes.

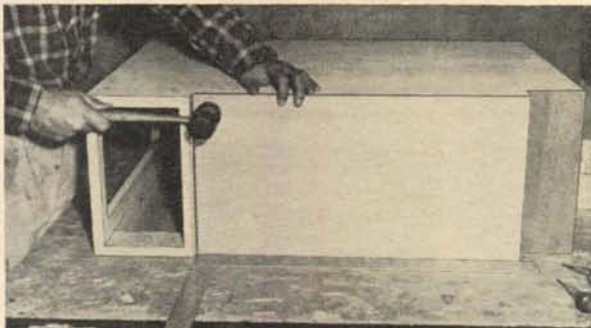


All pre-fab base cabinets have at least one drawer, some have four. Joints are glued, parts tapped together.



Instruction sheet shows how to install hinges and the magnetic latch, after aligning door over opening. All necessary hardware is provided.

After door is hinged on it is tapped with mallet to register position of latch.



Bottom hinges on base cabinet, being installed here, differ from top ones, as they have flange that supports door.

Shopping Tips

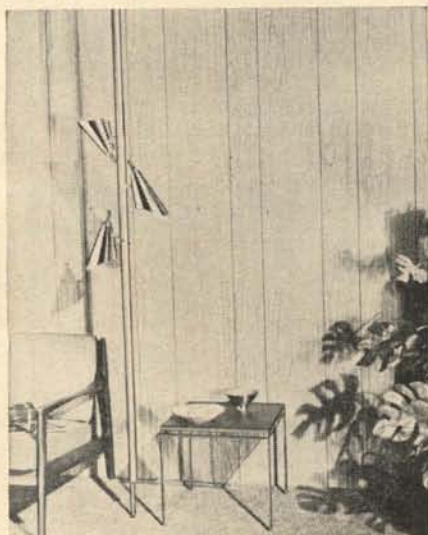
In communicating with companies whose products are described in this department, please mention **WORKBENCH**.

Universe Mobile



ASTRONOMICALLY ACCURATE in detail, this mobile is made from illustrations copied from photos taken at the Palomar Observatory. The various galaxies, star clusters and comets are explained in a booklet packed with a mobile. Fine as a gift for a space-age youngster, for home and classroom. \$2 from Modern Educational Aids, Box 209, Wilmette, Ill.

Free Wall-Panel Brochure



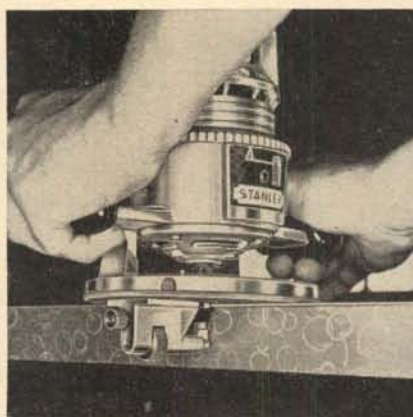
TONGUE-AND-GROOVE PANELS of hard-board are faced with plastic laminate to produce beautiful wall panels that are practically maintenance-free. Panels are 16 in. or 48 in. wide, available in 8 and 10-ft. lengths. Matching moldings are sold to trim paneled walls. For full-color booklet write to: Lamidall, Woodall Industries, Inc., 3500 Oakton St., Skokie, Ill.

Pocket Radio Transmitter



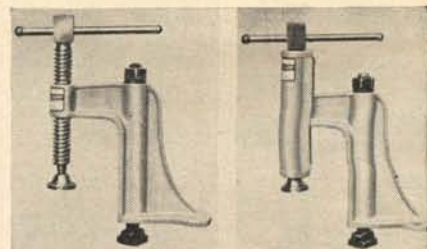
PORTABLE UNIT TRANSMITS to standard home, car or portable radios within a couple of hundred feet. Use as baby sitter, intercom, to make "special announcements" over radio. No license required, uses 9-volt dry cell. \$9.95 from Johnson Smith Co., 6615 E. Jefferson, Detroit 7, Mich.

New Veneer Trimmer



NOW AVAILABLE for Stanley routers is a trimmer for veneers and plastic laminates that is more accurate and much more easily adjusted than earlier units. The projection arm on the unit can be adjusted to leave up to 1/4 in. overhang on initial rough cuts. Depending on the router model the trimmer kit is \$15.95 or \$16.95 at your Stanley dealer.

T-Slot Clamps



THESE HEAVY-DUTY hold-down clamps install quickly in T-slot machine tables or wood or metal benches for holding work to be drilled, welded or assembled. Each clamp is furnished with a 5/8-in.-dia. T-slot bolt and a machine bolt to adapt to the desired setup. For welding service, clamps are fitted with spatter shields. For more information: Adjustable Clamp Co., 415 N. Ashland, Ave., Chicago 22.

Shop Slide Rule

FOR QUICK FIGURING of the cost and amount of material required for a project in the shop, for determining ratios and proportions when making an item larger or smaller, a slide rule is the tool to use. This one costs just 92 cents plus 8 cents postage from: Larch, 118 E. 28th St., New York 16, N. Y.

Reactivate Septic Tanks



REGULAR USE of this dry powder that simply is flushed down drain provides bacterial concentrate that breaks up solids and grease in septic tanks and cesspools. Eliminates costly digging and pumping. Just 23 oz. will provide 6 months' supply, cost is \$2.95 from Northel Distributors, WM-5, P. O. Box 1103, Minneapolis 40, Minn.

Woodworkers' Catalog

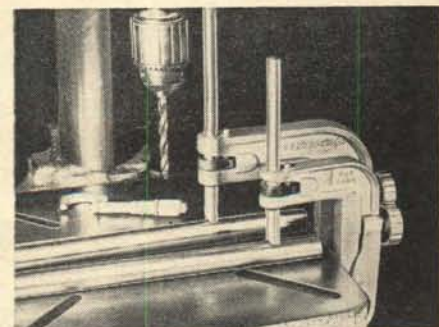


CONTAINING OVER 2,000 items, this new catalog has more craftsman supplies, hardware, woods and veneers than any previous edition. It also marks the 150th anniversary of the company. Copies may be obtained by sending 25 cents to cover handling and mailing to: Albert Constantine and Son, Inc., 2050 Eastchester Rd., New York 61.

Declaration Reproduction

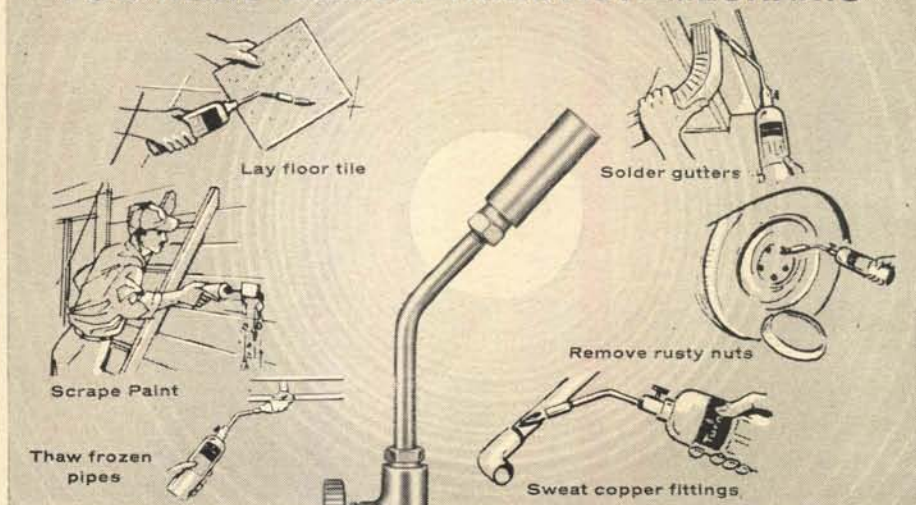
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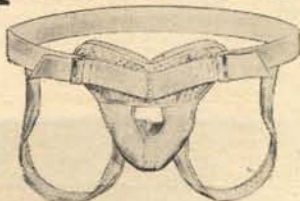
Mr. Caldwell spends his leisure time constructing scale models of old railroad cars. His other hobbies include woodworking, metalworking, photography, photo-developing and the study of plant life.

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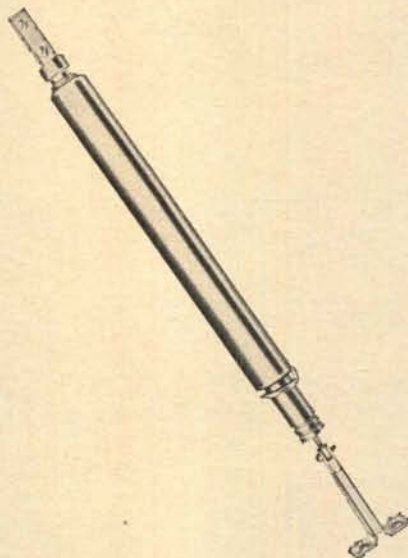
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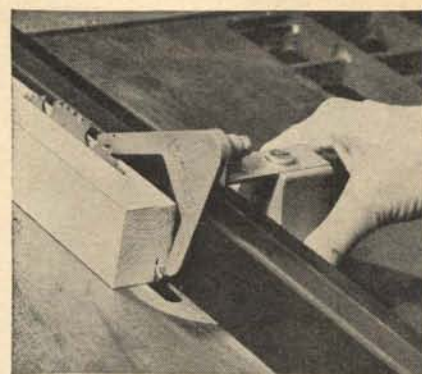
PLUNGER ROD IS ENCLOSED in an inner tube-within-a-tube on this door closer so that it cannot be scratched or damaged as is possible on closers where rod is in the open. Closer is available in 3 spring weights for light, medium and heavy doors. \$3.70 per closer, any weight. Series 100 Closer, Ideal Brass Works, Inc., 219 East Ninth St., St. Paul 1, Minn.

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USE OF THIS device keeps your hand on the other side of the fence from the saw blade. Stock as thin as $\frac{1}{8}$ in. and as high as 3 $\frac{1}{2}$ in. are handled with the longer finger of the unit holding down on the work, the shorter finger pushing. Bar that holds the fingers is adjustable for various widths of fences. Not for use on radial-arm saws. Money-back guarantee, \$3.98; Alson Mfg., 937 N. Evans St., Pottstown, Pa.

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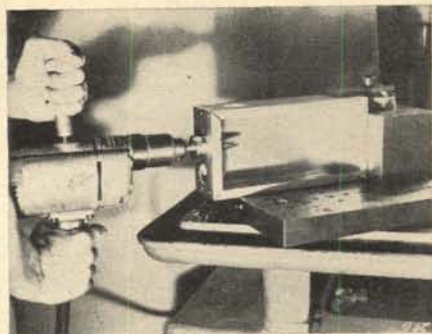


KIT WITH ROLLER now permits a do-it-yourselfer to apply adhesive quickly and smoothly for a neat job of installing linoleum and other resilient floor tiles and sheets. Kit is about \$2.39. For address of your nearest dealer write: Congoleum-Nairn, Inc., 195 Belgrove Dr., Kearny, N. J.

Free Laminate Booklet

NEW EIGHT-PAGE BROCHURE illustrates wood grain, solid, mist solid and abstract patterns available in 1962 line of plastic laminates. Also included are specifications and installation information for counter and table tops, walls and doors. Write to: Textolite, General Electric Co., Laminated Products Dept., Booklet T-CDL-540, Coshocton, Ohio.

Cone Drill Bit



DESIGNED FOR HAND POWER tools, this cone-shape bit will bore holes from $\frac{1}{4}$ to $1\frac{1}{4}$ in. dia. in any thin material. Hole size is scribed and the bit allowed to cut to the line. \$8.50 from: Scully-Jones and Co., 1901 S. Rockwell St., Chicago 8. Ask about Cone Drill No. 50500.

New High-Speed Grinder



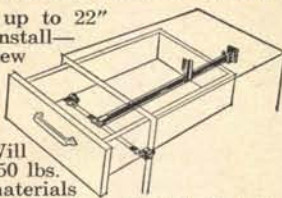
THIS INDUSTRIALLY-RATED grinder called the Model No. 3 is said to have a 50 per cent increase in power and efficiency over the earlier Model 2, and to run much cooler. The unit runs at 27,000 r.p.m., maintaining high torque under load. Fine for grinding, drilling, polishing, carving and engraving. Weighing just 18 oz., unit is \$29.95 complete with steel storage case. Dremel Mfg. Co., Racine, Wis.

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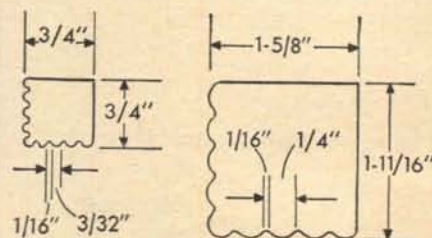
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A black and white photograph of a classic wooden armchair. The chair features a high, ornate backrest with a decorative splat and curved armrests. The seat is upholstered in a light-colored fabric with a decorative border. The chair is positioned in front of a window with curtains.

Our sincere thanks to the staff of the world-famous Nelson Gallery of Art in Kansas City, Missouri. These fine people allowed us to take measurements directly from the furniture in their splendid collections and took time out from a busy schedule to aid us in taking photographs, explained hidden features of the pieces of furniture, provided us with background and history for the items and showed us books in their private library that contained reproductions of working drawings made by craftsmen of the past.

MAKING A REPRODUCTION of this classic piece of furniture is a real challenge to any woodworking enthusiast. Hepplewhite was a master craftsman who designed and built a chair that has a light, delicate look, but which is tremendously strong. Heavy corner blocks and



double stretchers in the seat frame, Figs. 3 and 5, assure rigidity in this part of the structure. The shield-shape back, Figs. 1, 2, 4 and 6, is reeded in front, flat on the back, with five feathers carved on the splat. Hepplewhite favored the feather motif after making a chair, "executed with good effect for his Royal Highness, the Prince of Wales," and the heraldic three-feather emblem of the prince led to four and five-feather designs. The fan inlay, (patera), was made by Hepplewhite, but the modern craftsman can purchase ready-made inlays of similar design. The top slat is mortised in three places to receive tenons on the splat, and doweled to the upper ends of the back posts that also help form the shield. The bottom of the shield, (lower slat), is in two pieces, both being mortised to receive a tenon on the lower end of the splat. Each of the spade-footed front legs is fluted on the front and side. Upholstery is dull-green satin, with brass nail heads festooned across the front and side rails. There is no price on the chair in the Nelson Gallery. However a similar chair sold at auction in March of 1961 for

\$2,200.00. That particular chair had been made for Charles Carroll of Carrollton, a signer of the Declaration of Independence.

There are minor irregularities in the design of the original, as it was handmade. This is a help when making a reproduction, as slight mistakes will lend "authenticity" to the project. Carving will be the biggest problem. If you are not a wood carver, perhaps you have a friend who is. If not, we suggest you get catalogs from the several of our advertisers who sell wood and supplies to home craftsmen. They have pressed-wood carvings that can be cut and fitted to make reasonably authentic carved trim, and also inlays that are quite close in appearance to the patera.

The chair on the cover and in Fig. 1 has arms and is a "host" chair. In Fig. 6 is a side chair. Both are identical except for the addition of the arms.

Mahogany was used in the original chair, you may prefer another hardwood. (Do not use Philippine mahogany, actually lauan, as it is inferior for furniture. African or Honduras mahogany of cabinet quality should be used.) Any wood

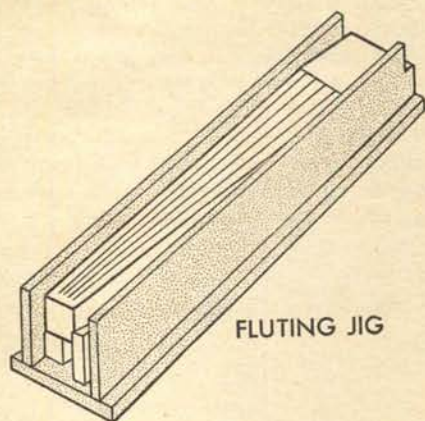
used should be kiln-dried of furniture-making quality. We again refer you to our advertisers who deal in quality hardwoods. While the front rail, side rails and seat stretchers will be hidden by the upholstery, they also should be mahogany, or the same wood used for the rest of the chair, to assure that all parts of the chair have the same coefficient of expansion and contraction under varying conditions of humidity. Only the back surface of the back rail need be finished. On the original chair unfinished stock was used for seat-frame members and a piece of mahogany veneer was applied to the outside of the back rail.

Enlarge all squared drawings to make your patterns. (Full-size plans of the chair are available for \$3.00. Address Hepplewhite Chair, c/o WORKBENCH, 543 Westport Rd., Kansas City 11, Mo.) Use a sliding T-bevel to duplicate odd angles directly from the drawings; such angles as those on the tenons on the ends of the side rails. Note that where a pair is required that one item is left-handed, the other right-handed. Save the waste pieces when band-sawing the arms, back posts, etc. Tack the scrap back onto the cutout after sawing one profile. This method provides a flat surface to slide on the saw table, and positions the drawing of the adjacent profile. Note on the ends of the arms and arm stumps the points marked "X". Allow about 1/4 in. extra length at these points. After the arms and stumps have been fitted in place, cut the lower ends of the stumps flush with the lower edges of the side rails. Form a slight radius on the outer lower corner of the stumps as indicated. Use the extra length on the arms to make an exact fit to the back posts. After the stumps have been fitted, remove them and attach the upholstery before fastening the stumps with wood screws driven into them through the side rails from the inside.

Mortises can be made by drilling a series of holes to the right depth, then cutting between them with a sharp wood chisel. If you have a drill press, a mortising bit that "drills square holes" will save time. It should be noted that although matching mortises and tenons are shown as having identical dimensions, it definitely is necessary to reduce slightly the sizes of the tenons to permit fitting the parts together. Use a 1/16 in. veining bit in a portable router to make the fluting on the front legs. Make a simple jig for the operation as shown. This jig is about 1/2 in. higher than the thickness of the upper portion of the legs. Use



4. This close-up of the chair shows carving on the splat, and the patera, or inlay, as well as the carving on the ends of the arms. Note the fluting on stumps.



FLUTING JIG

wedges to level the sections to be fluted, and to angle the leg so the flutes will be cut parallel to the sides of the jig. Cutting the reeding on the back posts and shield members also can be done with a router, although some handwork also will be required. The same veining bit is used to outline the reeds, the bit being positioned on the stock by clamping a round-end block about 2 in. wide to the router base. A sanding block then is used to shape the reeds, and the curve between, or a template is made from the "typical profile" and the bit adjusted up and down, as well as across, to permit shaping the reeding in several passes. We would suggest assembling the back posts and shield members without the splat in place. This will permit running the router along the inner edges of the shield.

Use a good-quality furniture glue and carefully clamp all joints when assembling the chair. After fitting together the back posts and shield, let the glue set. Then, assemble the seat frame and front legs and install this assembly on the back. Place the chair on a flat surface and make sure all legs sit firmly.

For upholstery, canvas webbing and padding can be used, or zigger wire and padding. The simplest method is as indicated: a rabbet is cut along the inner top edges of the seat-frame members to receive a piece of plywood. Foam rubber padding is placed on the plywood, then the upholstery material is fitted over the padding.

Because of the complexity of the assembly of the chair, we recommend "dry-fitting" before gluing any joints. Also, when there is any question in your mind as to reeding, fluting or carving, use scrap stock to make practice cuts. △ △

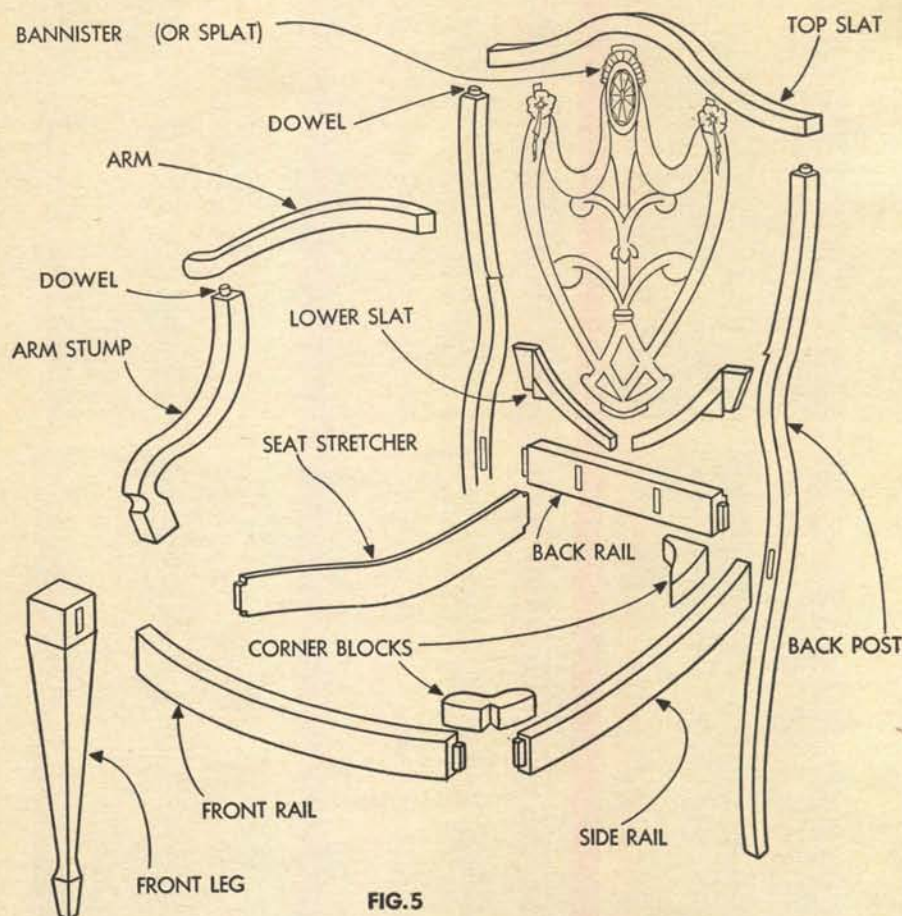


FIG. 5

MATERIALS LIST

Besides cabinet lumber, turning squares and turning blocks of various sizes can be purchased when thicker stock is required.

All mahogany (or other hardwood).

Back Post (2) 4" x 4" x 32"

Front Rail (1) 2" x 2½" x 18"

Back Rail (1) 1½" x 2¾" x 10¾"

Side Rail (2) 1½" x 2¾" x 15½"

Lower Slat (2) 1½" x 6¾" x 6½"

Upper Slat (1) 1½" x 4¾" x 16½"

Splat (1) ¾" x 9" x 19½"

Arm (2) 1½" x 2½" x 10"

Stump (2) 1" x 6¾" x 11¾"

Front Leg (2) 1½" x 1-11/16" x 17¼"

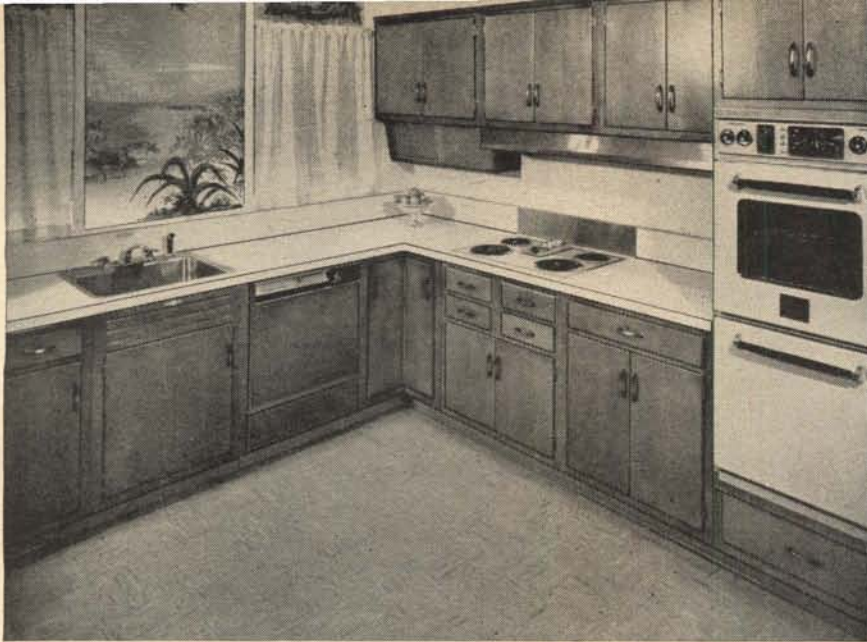
Seat Stretcher (2) ½" x 4" x 16"

Corner Blocks (2) 2" x 3" x 5"

Corner Blocks (2) 2" x 2½" x 5"



6. This side chair has no arms. Apparent here is way back posts are closer together than front legs.



Sink and range are set in this L-shape counter that is covered with plastic laminate. Kitchen is in Hot-point Center located in New York City. Lower photo illustrates straight-line counter with range making short L-shape at the right. Note that built-in oven is in "island" that might be around chimney.

Making Counter Tops

PART V

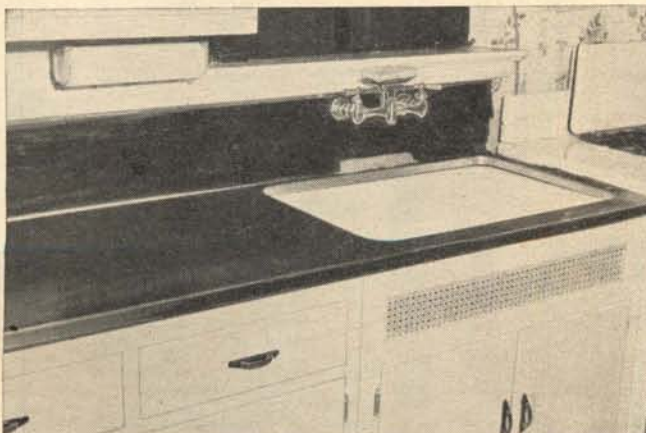


BEFORE YOU INSTALL your new kitchen cabinets, read photos and Fig. 2, it is best to make the complete counter top. The reason for this is that the making of the plastic-surfaced top may take several days. Your kitchen would be out of commission for that length of time if the old cabinets, Fig. 1, were pulled out, because the sink and range cannot be connected until the top is fastened into place.

The best method is to get everything ready ahead of time, making the counter top complete except for the necessary cutouts. The cabinets then can be installed. It will take very little time to make the cutouts and install the sink and range. You

Building Kitchen Cabinets

RALPH TREVES



1. This is photo of sink and counter in kitchen that was remodeled for kitchen-cabinet series in WORKBENCH. It is in striking contrast to sparkling counter in modernized kitchen.



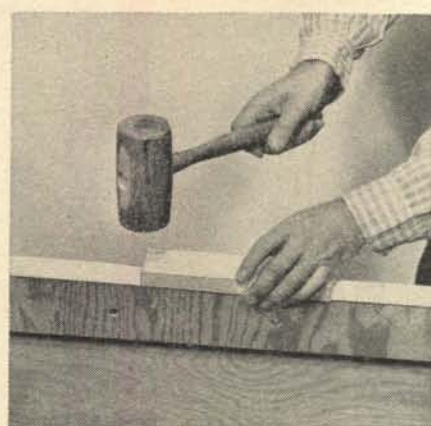
2. Remodeled kitchen has counter that contains new sink with one-lever faucet, built-in gas range, as well as automatic dishwasher under counter. Switch is for garbage disposer.



3. Strip of plywood is attached to front edge of counter top to give thicker appearance. Contact adhesive is brushed on edge and on laminate.



4. When cement is dry, place laminate strip on counter edge, flush with bottom edge, projecting slightly above counter top to permit trimming.



5. When laminate strip is aligned entire length, tap it in place with mallet or hammer and block of wood. This assures complete adhesion.

then can make the plumbing, gas and electric hookups to put your new kitchen into action.

In regard to the counter top, there is an infinite variety to choose from in shape, thickness of the edge, type of edge trim, selection of the plastic-laminate color and pattern. For the WORKBENCH kitchen project, the plastic laminate selected for the counter top was Textolite Pink Spungold No. TX-4762. The shape of the counter top will be determined mostly by the arrangement of the room itself and placement of the cabinets. Study the illustrations in shelter magazines, and the literature offered by appliance manufacturers to help you select a style. Instructions given in this article can be adapted to suit any type counter, whether it is straight, free-standing "island", L-shape, rounded-end, etc.

It is most desirable to keep the counter top a continuous length, to assure easy cleaning and best ap-

pearance. The floor cabinets are individual pieces, but the top is a single unit that spans all cabinets. For the top use $\frac{3}{4}$ -in. plywood or particle board, such as Novoply, (made by U. S. Plywood Co.) available in lengths up to 12 ft., which is long enough to span most kitchen cabinets. If your cabinets are longer, or a right-angle L-shape is required, there is a way of fastening sections of counter top flush and tight. The method and required fasteners are described in another article in this issue.

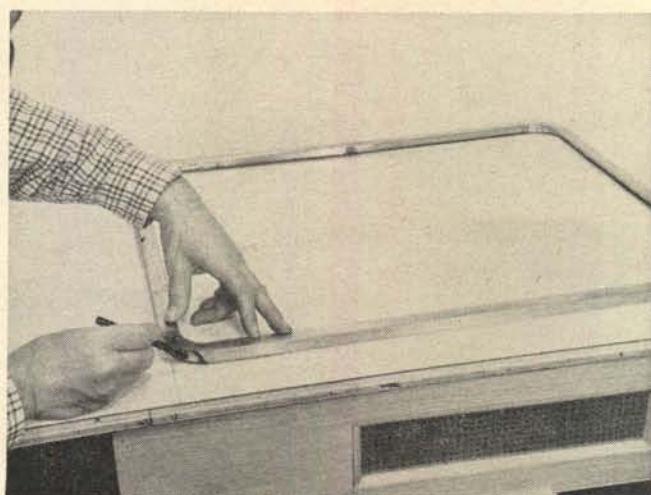
Rip the $\frac{3}{4}$ -in.-thick panel to the width of the counter top, allowing an overhang of from 1 to 3 in. If the front edge is to be finished with plastic laminate, the laminate is applied to the edge before it is applied to the top. This is so the laminate on the top will cover the vertical strip, and resulting joint. First, glue and screw strips of plywood 2 in. wide to the front and back edges of the top, at the ends and at sev-



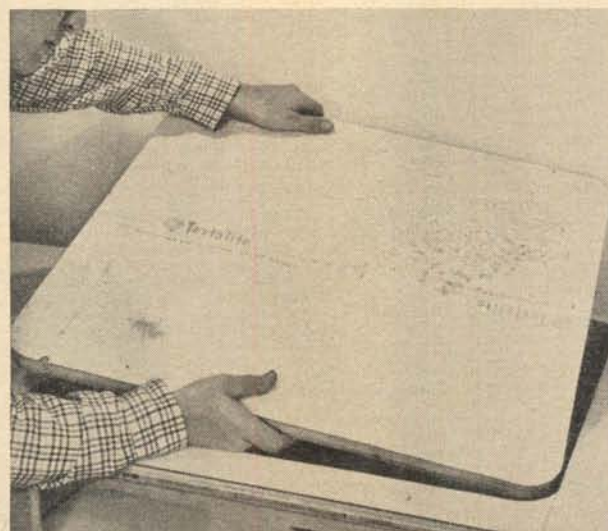
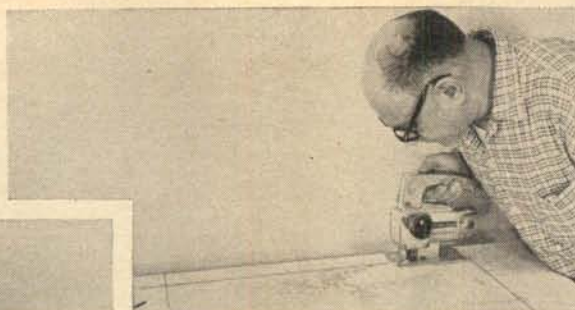
6. Quickest way of trimming laminate is with portable router and laminate-trimming attachment, as with Stanley unit.



7. After plastic laminate is applied, cutouts for sink and range are marked directly on laminate. T-square is used here, 2-ft. square also can be used. Be sure all measurements are accurate.



8. Sink rim of aluminum or stainless steel is positioned, its outline drawn inside area marked for it. (Frame used is Hudee Ideal, by Walter E. Selck Co., Chicago), others are available.



9. Hole is drilled near corner of scribed opening, then hole is drilled to permit insertion of blade of portable jig saw. Cut is made carefully on the line, then complete section is lifted out.

possibility of chipping and cracking the laminate is much greater. Laminate is applied to the top next, the sheet being cut $\frac{1}{8}$ to $\frac{1}{4}$ in. oversize. Fit the sheet flush with the back edge of the top, allow the excess to project past the front edge. The excess is trimmed in the same manner as on the front edge. Next, a splash apron, if desired, is fitted on the back edge of the top, utilizing a metal cove, Fig. 13, to make a watertight, easily-cleaned joint. If a single-piece top is desired, Armstrong's Counter Coralox can be applied and bent up at right angles on the apron. Any Armstrong dealer can show you the material and how it is applied to the top and apron.

The final step is to make the necessary cutouts, using a portable jig saw, Figs. 7 through 9. Measure locations of the openings carefully and mark directly on the laminate with pencil or crayon to avoid any errors. Drill a hole at one corner of each cutout to start the sawing. There may be some slight chipping of the plastic, but this will be covered by the sink rim or the range. Follow the instructions of the manufacturers of the sink and range as to location and clearances

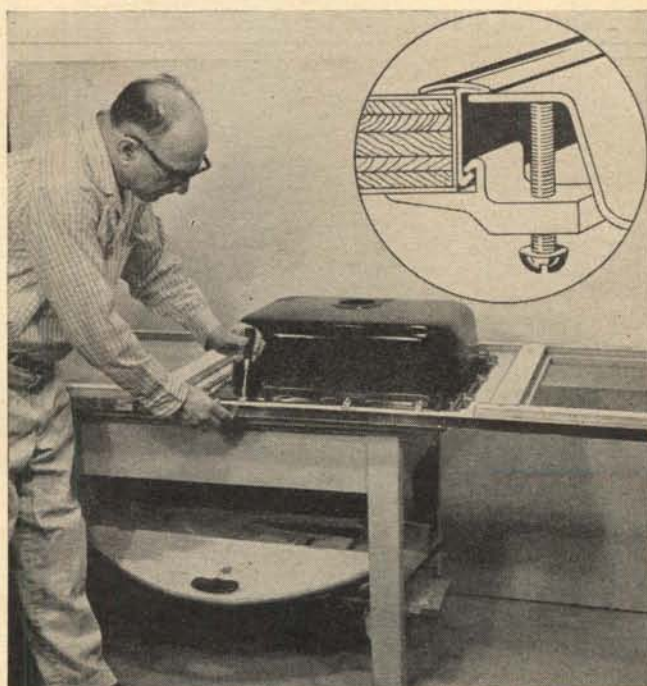
eral places along the length, Fig. 12. If you are going to use metal snap-on molding, built up the front edge to accommodate it, Fig. 14.

Rip lengths of laminate in strips slightly wider than the width of the front edge of the counter top and apply it with contact adhesive as shown in Figs. 3, 4 and 5. After the laminate is applied, the quickest way to trim the excess is with a portable router fitted with a special laminate trimmer, Fig. 6. It is best

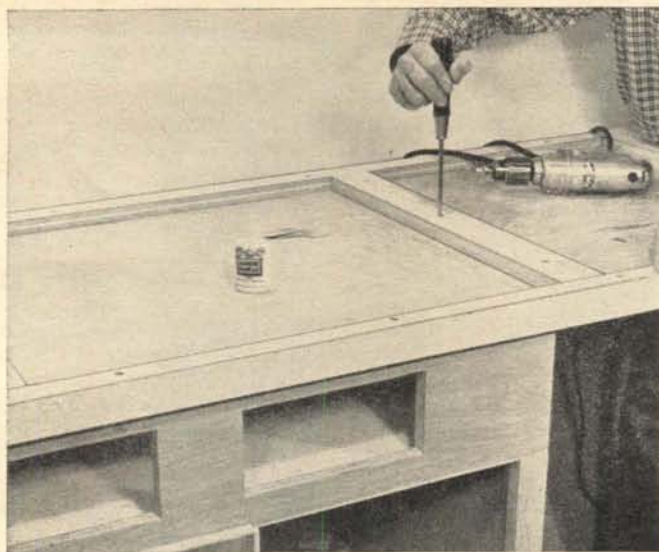
to rent or borrow a router if you do not own one. An alternate method is to use a sharp plane and file; quite time-consuming and the



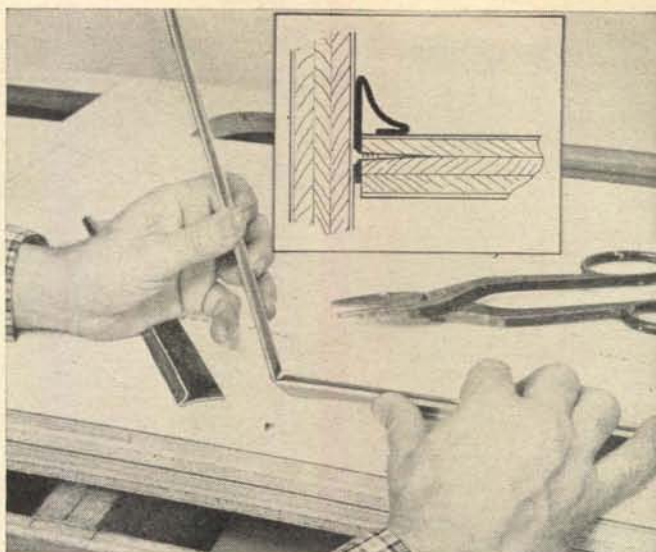
10. Recess in sink rim is packed with plastic glazing compound, then sink bowl is pressed into compound to assure watertight seal between the sink rim and the sink bowl.



11. Special lugs are spaced around edge of sink bowl, drawn up tight by means of screws so that rim, bowl and countertop are firmly clamped together to make tight joints.



12. Strips of plywood are used as cross braces under counter top to stiffen it and provide means of attaching top to cabinets by driving wood screws from beneath.

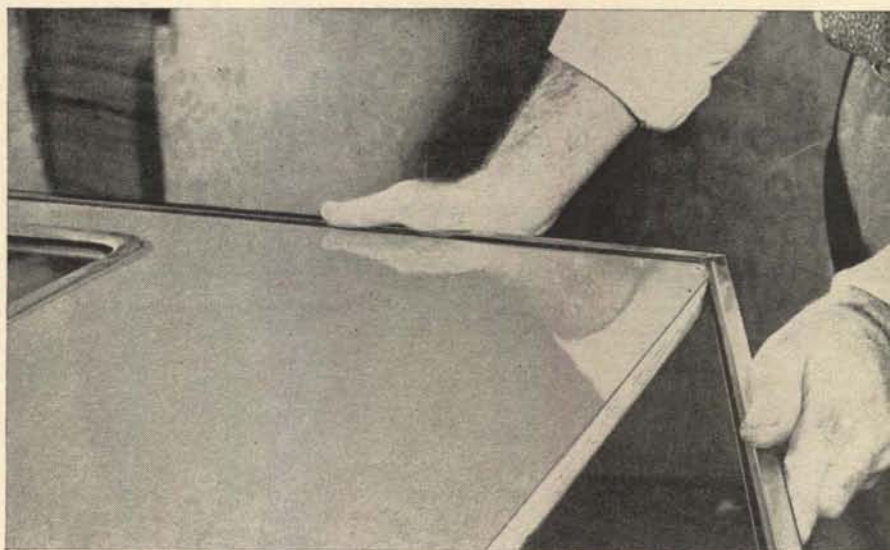


13. Cove molding is notched to make mitered corner, then is tacked to back edge of counter top to seal joint between counter top and splash board. This assures watertight top.

required. The sink bowl is attached before the counter top is put in place, using a special rim and fasteners, Figs. 10 and 11.

When the sink is in place, the counter top is installed on the cabinets and pitched so water drains toward the sink. The bowl will cause the top to sag slightly, it may also be necessary to use thin shims under the top to slant it so water drains properly.

If you have decided that metal or plastic trim is to be used on the



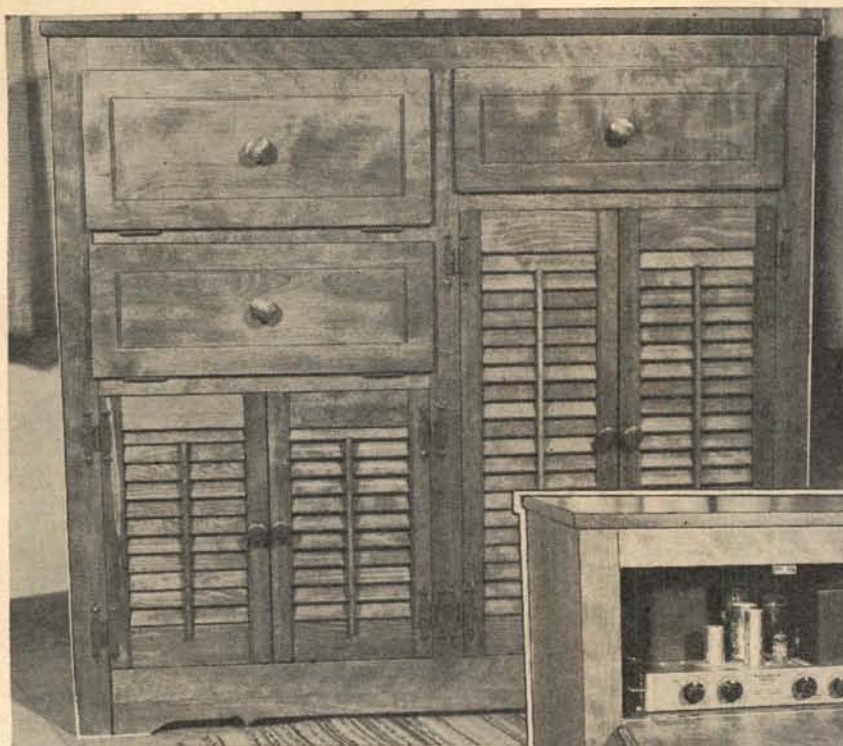
14. Metal snap-on molding has channel that fits over top edge of counter for tight seal, then lower edge is tacked to underside of top.



edges of the counter top, Fig. 14, the thickness of the front edge of the top will have to be made to match the width of the trim. This type trim snaps over the edge, then is held in place by driving tacks through its lower edge into the underside of the top.

While shopping for your sink bowl you might be interested in the unit in Fig. 15. This sink has one bowl oversize to handle large pots, pans and the like. If your wife uses larger utensils quite often this would be a big help. $\Delta \Delta$

15. Called Two Fifty Plus this stainless-steel sink has controls behind righthand compartment so left side is larger to handle pots, pans.



The quaint charm of early-American furniture is combined in this cabinet with practical storage for modern hi-fi components, turntable and record storage, with provision for future installation of a tape deck.

Early-American Hi-Fi Cabinet



Raymond Ayers

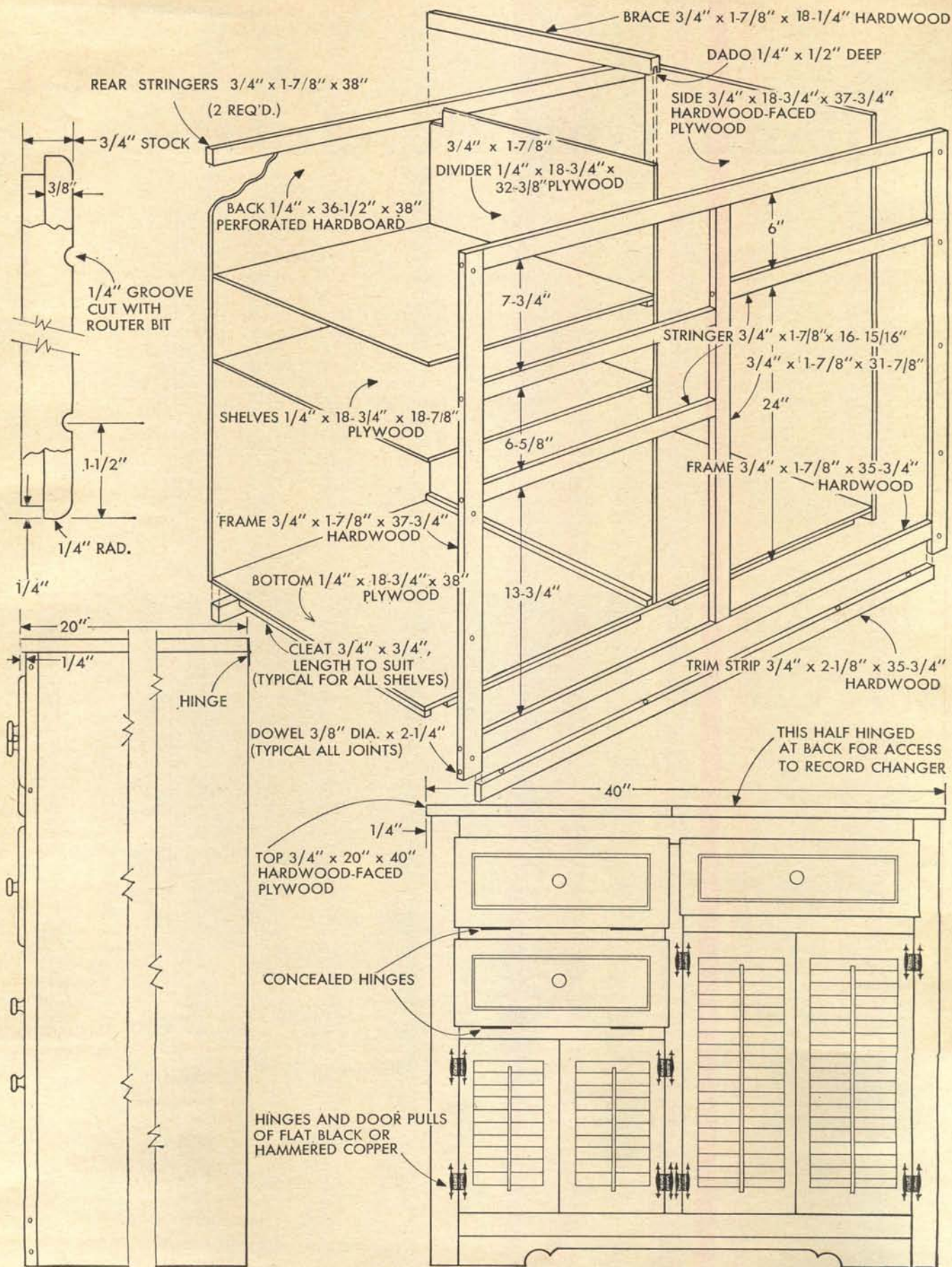
FOR THE HI-FI ENTHUSIAST who builds his own components from kit, this cabinet may be the answer to several problems: Where can I store the components, how do I allow for additional components and how can the storage cabinet match an Early-American decor? As shown in the photos, when the cabinet is closed it has the authentic flavor of colonial-American styling, when it is open it provides generous storage for modern hi-fi equipment.

Construction is simple, hardwood-faced plywood being used for the top and sides of the cabinet, hardwood for the frame. For the back of the cabinet perforated hardboard is used, to assure ventilation and cooling for the electronic equipment. Flathead screws fitted in counterbored holes can be used, the heads being covered with dowel plugs. However, in the original, just dowels were used, being glued in place and the assembly clamped until the glue set. Ends of the dowels were allowed to project slightly, then sanded flush. The cross grain of the dowel ends will stain slightly darker than the rest of the wood, thus adding

to the rustic, hand-built look of the finished cabinet.

Birch solid stock and birch-veneered plywood were used on the original; maple or other hardwood can be used at the choice of the builder to match other pieces of furniture. Shutters used for the doors are stock sizes that can be purchased wherever unfinished furniture is sold. They will require some trimming and fitting, but the problems involved in making them will be eliminated, as well as much time.

The height of the shelf for the record changer will be determined by the individual machine, so no dimensions for it are shown. Solid hardwood is used for the drawer fronts, two of which actually are doors hinged on the lower edge. Brass chains support the doors when they are lowered. The third door, the one in front of the turntable, is a "dummy" used for appearance only. All three drawer fronts are grooved $1\frac{1}{2}$ in. from each edge with a router bit, as indicated in the drawing. Hardware for the cabinet should be of colonial design, possibly to match the hardware used on other pieces of furniture in the same room. $\Delta \Delta$



Expand Your Porch Or Deck

PAUL COREY

IF YOUR PORCH OR DECK IS A CONCRETE SLAB on level ground, it is easy to enlarge it by pouring more slab. However, if your porch or deck is some distance off the ground, even out over a hillside as is the structure shown in this article, elaborate framing is required to expand the area. You can considerably reduce the structural complications by building a deck of 2 x 4s on edge, spaced $\frac{1}{4}$ in. apart. Because of the greater strength of the lumber on edge, supporting members can be spaced 8 ft. apart, thus reducing the number of necessary joists, girders and supporting columns. An added advantage of the spaced 2 x 4s is that

the deck then is self-draining, and a complete circulation of air around the deck members dries them quickly even after a heavy rain storm.

A new, free-form deck with benches and flower boxes will give an older home a fresh new appearance and provide added space to an "outdoor living room." If the existing porch has a roof that is supported by columns and enclosed by a railing, just remove the railing and add the deck of 2 x 4s on edge. To join the new deck to the old porch, remove the face board from the ends of the present joists. Fasten extension joists in pairs to the existing joists, spacing the pairs about 6 to



The original deck was not conventional, being a slab of reinforced concrete on cantilevered beams. The trim board was removed and pairs of 2 x 6s were bolted to the beams.

8 ft. apart. The new joists should be notched to allow for the thickness of the on-edge 2 x 4s, if the ends must fit over the mud sill of an existing structure. While working on this part of the project check the condition of the present supports. If any are rotted or split, replace them before adding the new structure. The extension joists should be supported by 4 x 4 columns, 2 x 4 X-bracing between the columns providing rigidity to the new structure.

All lumber should be given a coat of sealer before being nailed into place. The 1/4-in. spacers between the 2 x 4s should be exterior-grade plywood. When the location of the columns has been determined, dig holes 12 in. in diameter deep enough to be below the frost line. Flair out the bottom of each hole and fill with concrete. Next drive a number of 20d spikes through a short length of 2 x 6 and push this into the fresh concrete, leveling it both ways. The 4 x 4 columns then are placed on the blocks when the concrete has set, and the ends are spiked to the blocks. Columns at the ends of the extended deck are allowed to project 24 in. above the level of the deck to provide backs for built-in benches. Backs for the benches are provided



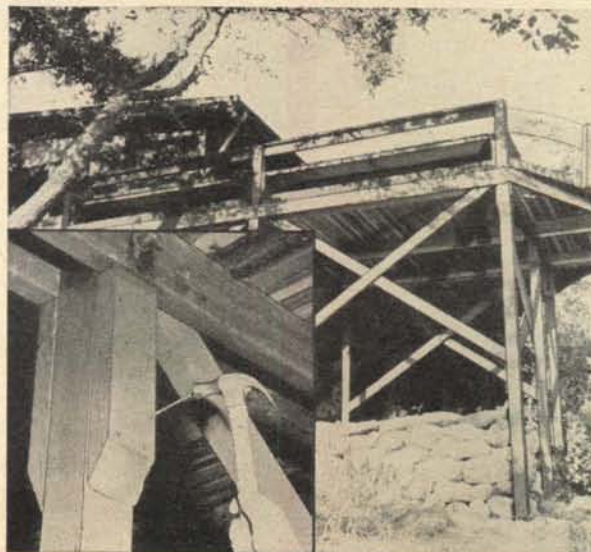
by nailing and bolting lengths of 2 x 4 across the inner faces of the columns. Seats are made from lengths of 2 x 10 or 2 x 12.

Because the deck shown in the photos was to be a curved, free-form shape, 2 x 6s were spiked across the ends of pairs of joists. This allowed the ends of the 2 x 4s to be cantilevered a couple of feet beyond the crosspieces. A free-form shape then was marked on the 2 x 4s, the line being kept outside the joists and crosspieces. A portable circular saw was used to cut along this line. The power saw was not large enough in diameter to cut all the way through the 2 x 4s and a handsaw was used to finish the cuts.

A railing for the original deck was made by using lengths of smooth-surfaced 5/8 in. dia. concrete-reinforcing rod. They were "threaded" through 28-in. lengths of 2 x 6 that were cut as indicated in the sketch. These 2 x 6 "posts" were spiked to the edge of the deck, then lag screws were used to strengthen the fastening. For an even stronger connection 2 x 4s could be



Holes were dug and concrete piers for the 4 x 4 supports were poured on the spot. Short lengths of 2 x 6 with spikes driven through them were set and leveled.



Floor joists were bolted to 4 x 4 columns, then 2 x 4 blocks were nailed to columns under joists for extra safety. This hillside structure is unusual, unorthodox.



Deck itself is constructed of redwood 2 x 4s on edge, strips of 1/4-in. exterior grade plywood are used as spacers.



After 2 x 4s were spiked in place, a free-form design was drawn, the lumber cut with a portable saw.

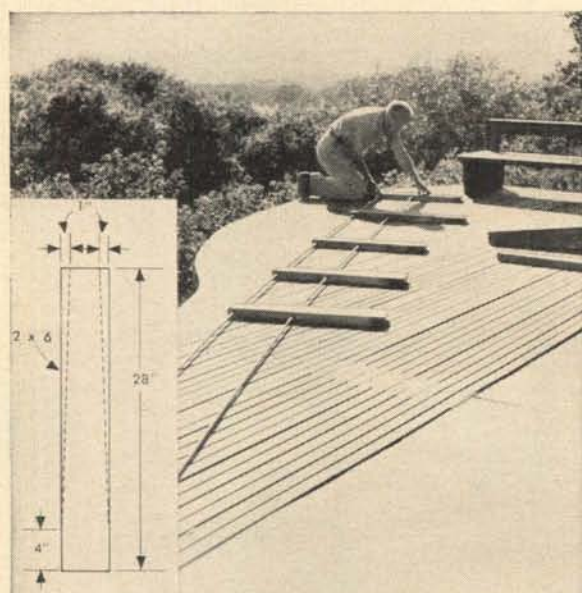


Cut off 24 in. above the deck, 4 x 4 columns at the end of the structure provided backs for built-in benches.

Curved railing is made by passing smooth 5/8 in. dia. reinforcing rod through holes 12 in. apart in lengths of 2 x 6, tapered as indicated in the sketch.

bolted to the deck, then bolts fitted through these 2 x 4s and the railing posts. Ends of the railing rods were anchored in the 4 x 4s that form the benches, and through the vertical 2 x 4 supports on which the planting boxes were fitted. You will note in the photos that both the planting boxes and benches are resting on lengths of 2 x 12 on edge. A 2 x 4 is nailed flat on each 2 x 12 to provide a wider nailing surface for the benches, and greater support for the planting boxes that are not fastened down.

If the deck you build will be just a few feet above the ground, we would recommend that you first spread gravel about 6 in. deep over the area to be covered. This will keep down weeds, and eliminate a muddy condition that children and animals might utilize for making mud pies and mischief. △ △



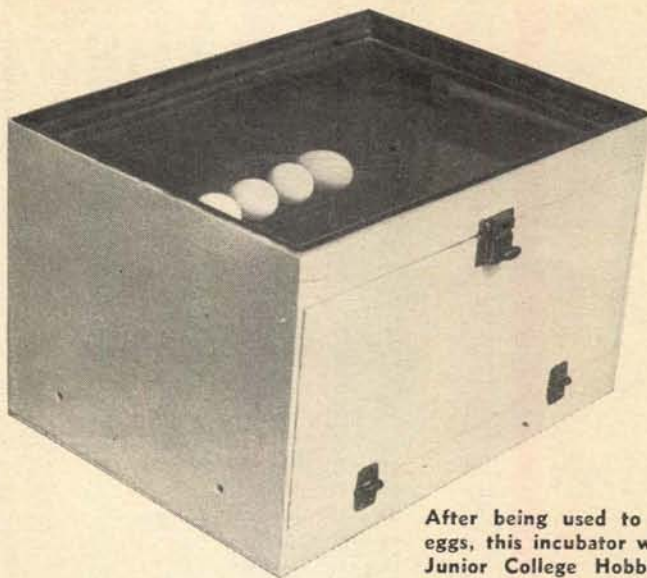
After 2 x 6 posts were spiked to edge of deck lag screws were used to reinforce fastening. For added safety, bolts could be used instead. Ends of rails were anchored in 4 x 4s at bench ends, and in 2 x 4s that support flower boxes. Steel rods then were painted flat-black color.



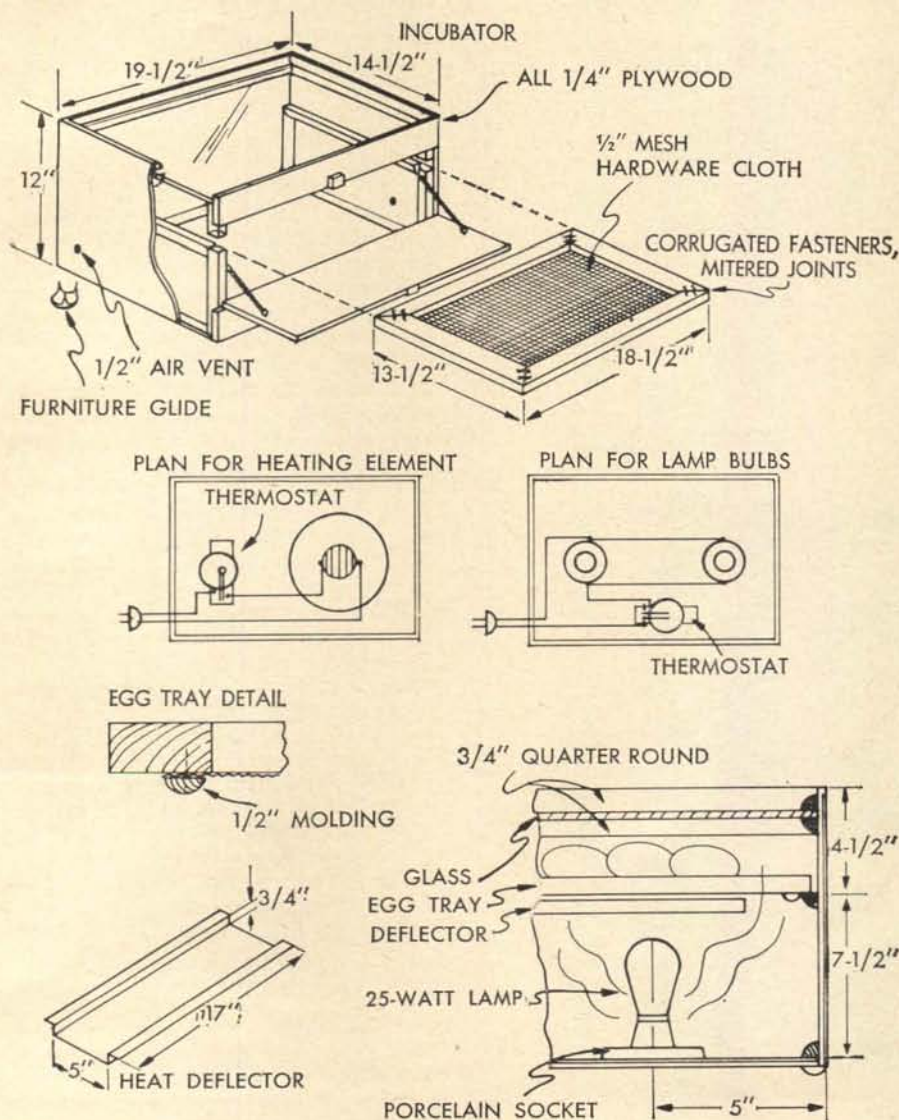
Flower boxes were constructed of redwood, with rough 1 x 12s for bottoms, finished 1 x 8s for sides and ends. The boxes are not fastened down, which permits them to be removed.

INCUBATOR FOR THE BEGINNER

HI SIBLEY



After being used to hatch two sets of eggs, this incubator was exhibited at the Junior College Hobby Show, Riverside, Calif. It was built by Karl and Kenneth Ramsing, Nuevo, Calif. Incubator is ideal hobby or school project.



FOR THE YOUNGSTER who wants to get some experience in poultry or game-bird raising, or who wants a practical project for a biology or science class, this incubator is an ideal subject. A student can build the incubator himself, and at low cost. The box is made entirely of 1/4-in. plywood with quarter-rounds as corner-reinforcements.

The egg tray is made of 1 x 2 stock, the lower surface being covered with 1/2-in.-mesh hardware cloth. Note that strips of 1/2-in. molding are fastened to the bottom of the tray near the edges to act as guides. A galvanized-metal heat deflector is wired to the hardware cloth, positioned over the heating element or lamps. The heating element for the original was taken from a brooder, but two 25-watt lamps can be used instead, as indicated in the drawing. A thermostat for the lamps can be purchased from Sears-Roebuck for slightly over two dollars, a thermostat for the brooder element is less than a dollar and can be purchased from farm-supply dealers.

Capacity of the tray is three dozen hen eggs. They should be turned over once a day and a saucer with a damp cloth should be kept on the floor of the incubator and moistened periodically. When chicks begin to hatch in about three weeks, they can be seen through the glass top and should be transferred to a brooder. As a point of interest to the uninitiated, be sure the eggs you try to hatch are fertile, "store-bought" eggs won't do. Δ Δ

Modern Sculptured



2. Cardboard mock-up of the lamp should be made to determine the correct proportions and sizes of parts.



3. The three uprights are pad-sawed on band saw or jig saw to be sure all are identical. Hold pieces together by nailing.



ACCENTED BY RICHLY-GRAINED walnut, the graceful lines of this lamp, Fig. 1, blend well with any modern decor. Construction is simple and the lamp can be made completely with hand tools, although power equipment will speed the job.

First step is to buy a lamp shade, or salvage one from a discarded lamp, and make a cardboard mock-up, Fig. 2. Depending on the size and shape of the shade, the dimensions of the base and the uprights can be changed to suit. The uprights are marked out, Fig. 7, pad-sawed to shape, Fig. 3, to make them identical, then the outside edges are roughed to a half-round profile. The profile next is smoothed by hand or power sanding, Fig. 4.

Hardware for the lamp can be purchased as individual parts, (several of our advertisers have extensive stocks), or purchased as a modernizing kit from hardware and department stores. The lamp socket is supported on a threaded 12-in. brass cluster stem topped with a $\frac{1}{8}$ in. male x $\frac{3}{8}$ in. female nozzle. The lower end of the column is fitted in a $\frac{1}{4}$ -in. floor flange. The flange is recessed into the base, Fig. 8, that can be sawed or turned to shape, Fig. 5. The two knobs

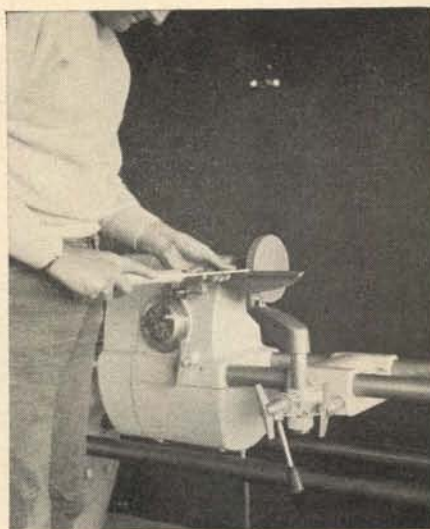
1. Sculptured from finely-grained wood and trimmed with brass, lamp is modern, beautiful and practical.

Lamp

Hugh F. Williamson



4. Outside edges of the uprights are roughed or carved to round them, then they are smoothed with a powered drum sander or by hand sanding.



5. Base can be turned on a lathe, or cut with band saw or jig saw. Power tools speed up the job, but hand tools can be used to make lamp.

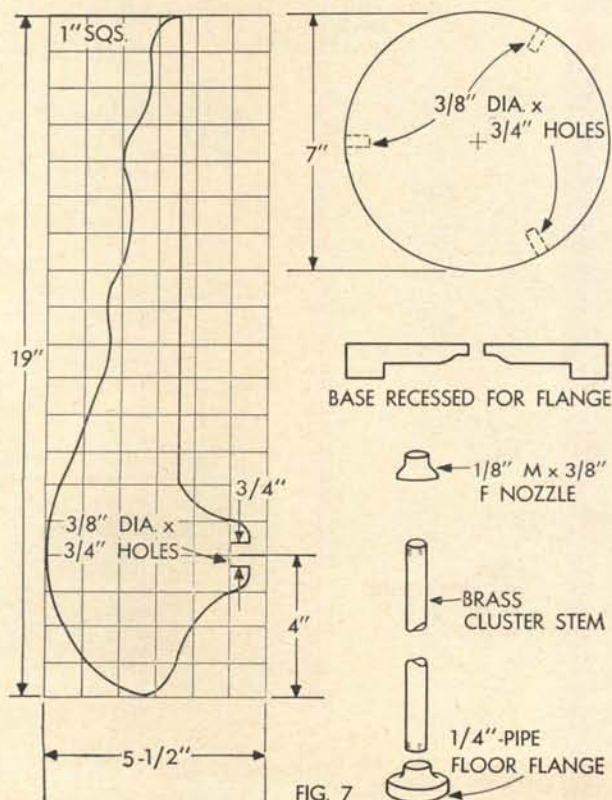


6. Two knobs for stem of original lamp were turned from glued-up stock. Carved free-form shapes also could be used, drilled to accept cluster stem.

that slip down over the lamp stem can be turned, Fig. 6, or carved in a free form if no lathe is available.

Holes are drilled in the notches of the uprights and in the edge of the base for $\frac{3}{8}$ -in. spiral dowels. Glue is applied to $1\frac{1}{2}$ -in. lengths of

dowel and the lamp is assembled. After the glue has set, rubber bumpers are screwed to the lower ends of the uprights, Fig. 9. The lamp cord is threaded through the stem, the socket is attached, the harp fitted on, then the shade. $\Delta \Delta$



8. Circle cutter is used to outline recess for floor flange, waste removed with chisel. Base is edge-drilled for dowels.



9. Uprights are attached to base with spiral dowels and glue, rubber bumpers are screwed to bottoms of the uprights.

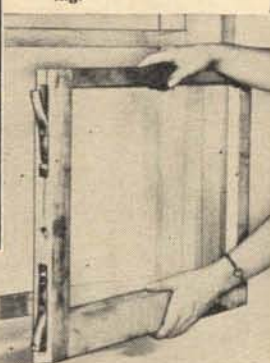
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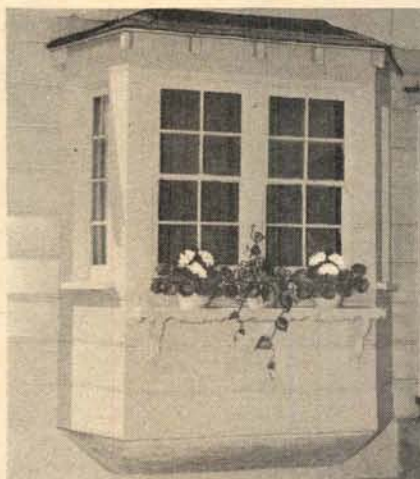
In this design footing was poured, brick wall built up to height of window to support bay, floor is extended into the bay.



ADD A BAY WINDOW

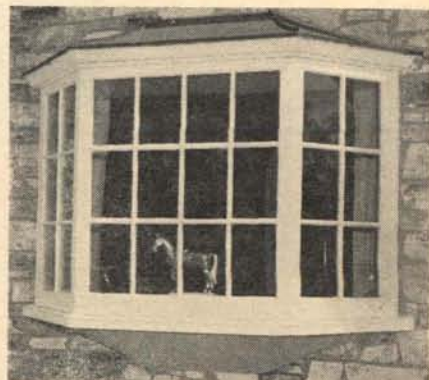
HI SIBLEY

IMPROVING THE APPEARANCE of a plain wall on a house often requires only the addition of a bay window. And the bay can be fitted in the opening occupied by an existing window.



Supports under this bay window are concealed behind frame to which metal lath was attached then covered with stucco to match the foundation.

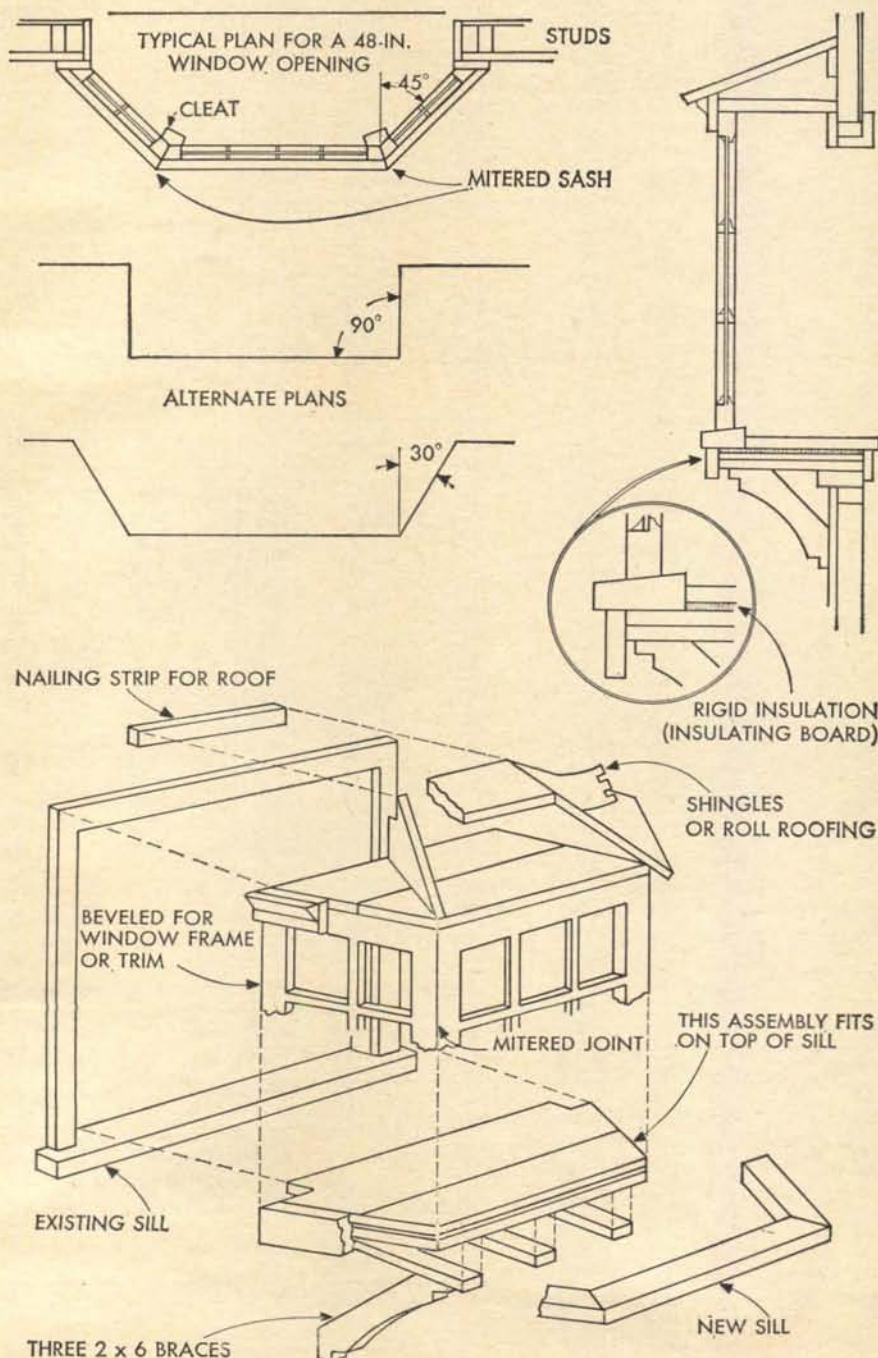
Stucco is used here also. Stucco can be tinted to match or contrast with most building materials, add interest.



One method, the most difficult, expensive and time-consuming is to pour a concrete footing, then build up a wall of masonry or framing to support the bay. This might be the answer in your own case, as it does have a more massive look, and will add bulk to a home. It requires the extension of the floor of the house, and does add floor space to the room.

A simpler and less expensive way is to simply fit the bay in the existing window opening, and support it on braces as shown in the drawing. The new wide sill, or shelf, is made of a "sandwich" consisting of a layer of rigid insulation between

two pieces of plywood. This makes a strong, insulating platform. The window is fitted on this platform, the edges being beveled to fit, as indicated. A simple hip roof can be made and covered with shingles or roll roofing. If a metal roof is desired, it is better to let a professional sheet-metal man do the job. The drawing shows a typical plan for a 48-in. window opening; your own dimensions will be determined by your own window. If a small window opening is to be enlarged to provide for a larger bay, the studding must be reinforced and a header extended across the top of the opening. $\Delta \Delta$



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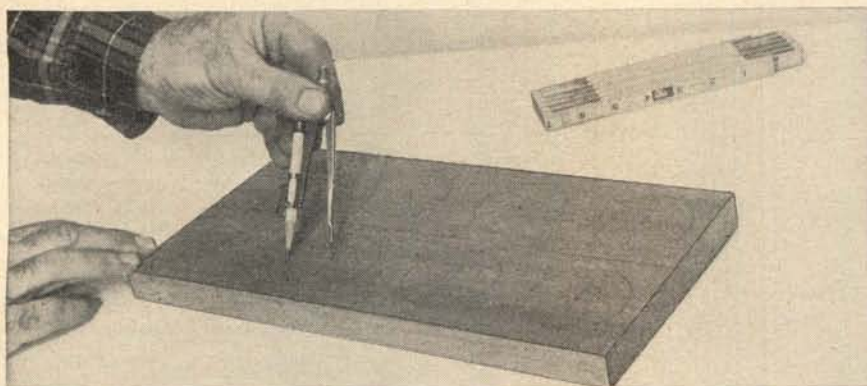


AT INFORMAL GET-TOGETHERS coffee is more likely to be served in mugs than in good china cups. This tray, of simple design and easy construction, was created for those occasions. It will carry up to eight mugs, eliminating the problem of balancing a number of filled mugs and reducing the chance of spilling the hot liquid.

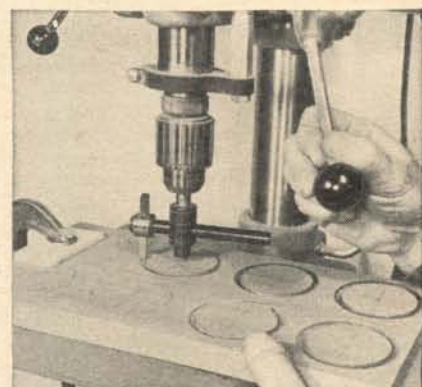
Scraps of hardwood are used for the tray; 1-in. stock ($\frac{3}{4}$ in. finished), is used for all three pieces. The tray base can be enlarged or reduced in size to fit a particular size of mug, but the proportions should be maintained. Lay out the mug hollows equidistant from one another along lines centered on each half of the width of the base. Cut the circumference of the hollows with an adjustable circle cutter to a depth of $\frac{1}{4}$ in. Note that the cutter blade has the angle on the outside to produce a bevel for the hollows. Remove the rest of the stock in the hollows with a router bit, using a drill press or portable router. Cut and notch the upright, then drill a hole through the length of it to receive a $\frac{1}{4}$ -in. roundhead bolt 6 in. long. The hole in the center of the base is counterbored to accommodate the nut so it does not project below the base. A washer is used under the nut. The tray was finished by rubbing it with mineral oil to which stain had been added.

Because of the simplicity of the design and construction, and the practical application for the coffee-mug tray, it would make a good project for a beginning craftsman, or for a group of youngsters looking for a practical, easy-to-make item. $\Delta \Delta$

Coffee-Mug Tray

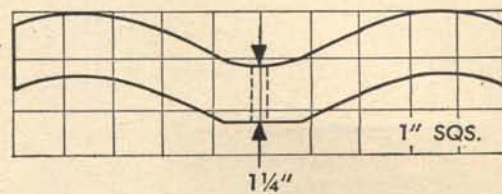
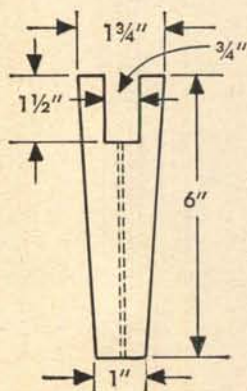
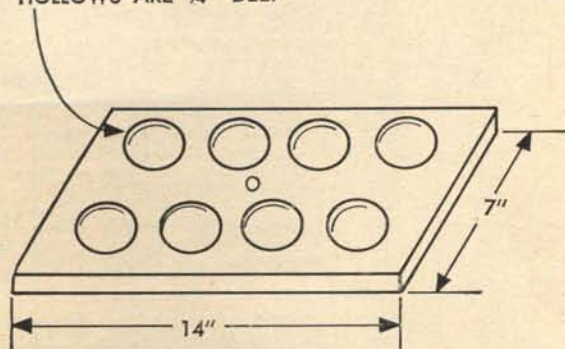


First step is to lay out locations of the hollows for the mugs. Diameter of the hollows will be determined by the sizes of the mugs to be used. It may be necessary to reduce or increase the size of the base to accommodate the mugs used.

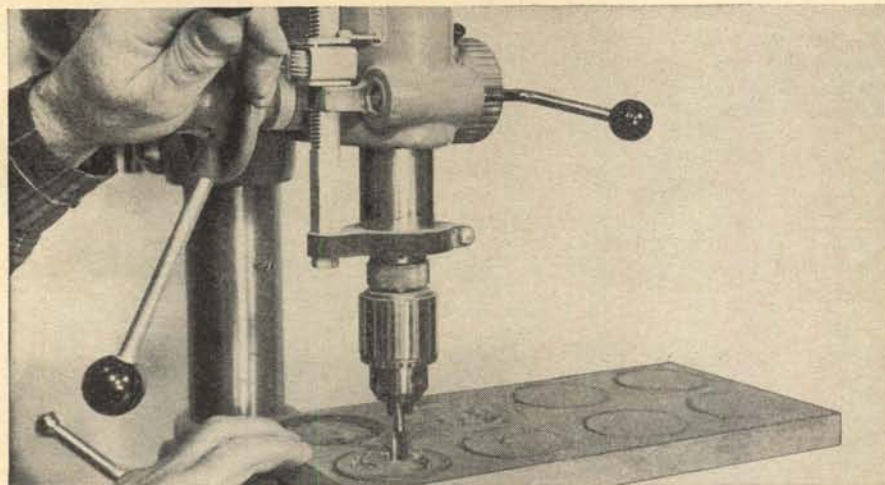


Circle cutter, with blade positioned to make slope on outside of circumference, cuts and marks edges of hollows.

HOLLOWES ARE $\frac{1}{4}$ " DEEP



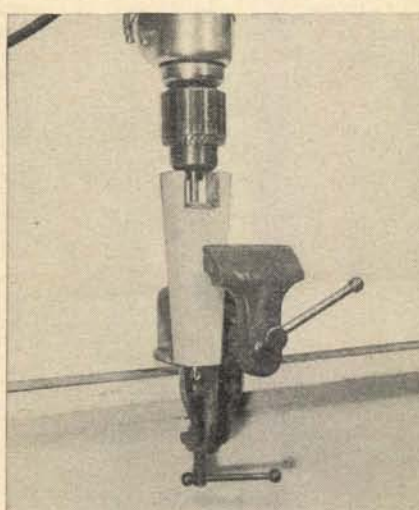
BASE COUNTERBORED $\frac{3}{8}$ " DIA. FOR NUT



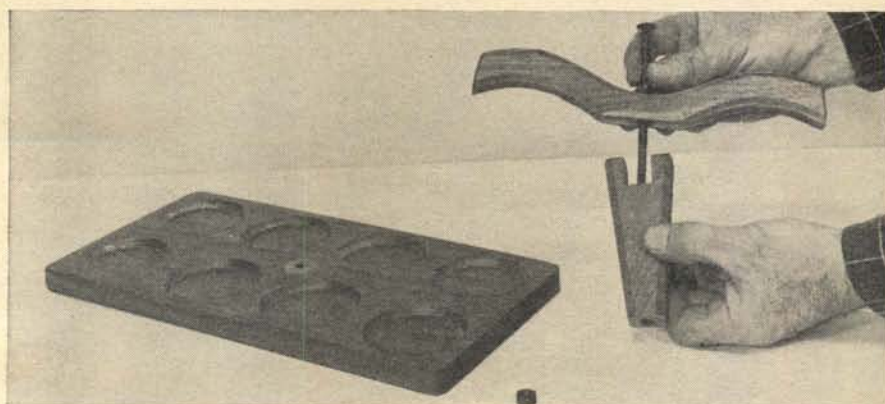
Router in drill press can be used to remove material inside circles cut by circle cutter. This is freehand operation; also can be done with a portable router. Depth of the hollows is $\frac{1}{4}$ in., which is ample to prevent mugs from sliding around.



Notch in handle upright is made by sawing a number of slots, then removing stock with wood chisel.

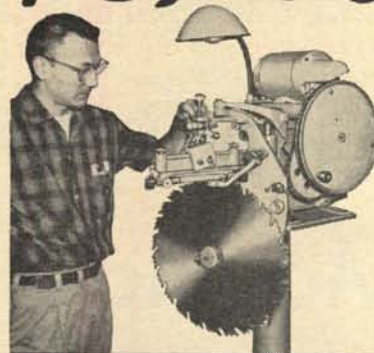


Hole is drilled down through upright to accept $\frac{1}{4}$ -in. roundhead screw that is run through handle, upright and the base.



Parts of the tray are finished before assembly, mineral oil mixed with stain can be used, or regular stain and heat-resistant varnish or other finish may be applied. It is a good idea to apply a quality glue to the tray, ends of the handle upright and handle.

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Repeated damage to the plaster on the wall of the dining area by chairs and table was eliminated by applying mosaic tile. Besides a hard, damage-resistant surface, glass tile adds beauty.

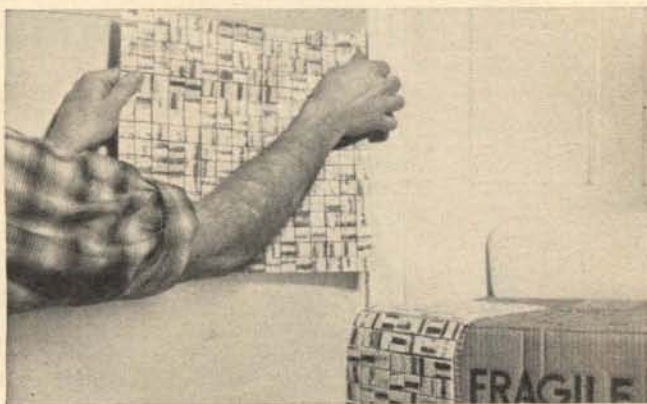
Beautify With Mosaic Tile

IS THERE A PROBLEM WALL IN YOUR HOME that is constantly being damaged? In the case illustrated the wall was in the dining area of a kitchen, and the table and chairs pushed by the youngsters frequently gouged the plaster. This meant repeated patching and repainting. The solution for this do-it-yourselfer was mosaic tile. This material is hard-surfaced, withstands impact and can be kept clean with a damp cloth. It also adds beauty, and increases the value of the home. There is

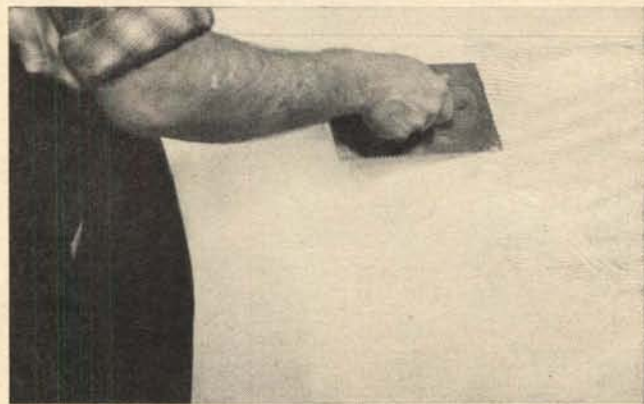


nothing complicated about applying tile.

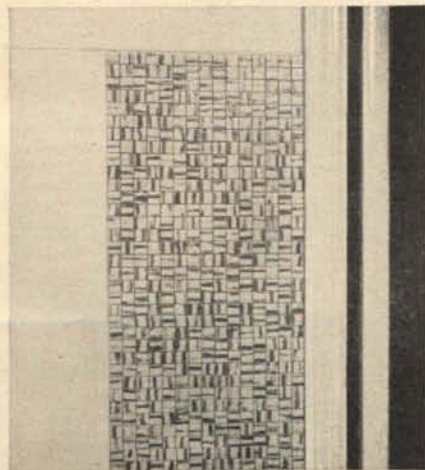
This homeowner learned that $\frac{3}{4}$ -in. squares of mosaic come mounted face up with a netting backing. The netting holds the individual tiles together, yet permits the adhesive to contact the backs of the tiles when the sheets are forced against the wall. The adhesive is a creamy substance that is applied to the wall with a notched trowel. Use of the trowel keeps the coating of mastic thin, and forms ridges that grip



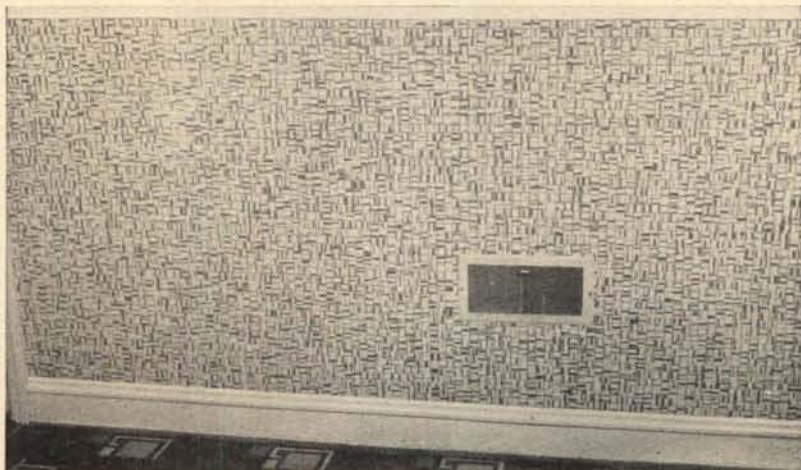
A level line is made at the top of the area to be covered with tile, then adhesive, a creamy substance called "mastic", is applied to the wall with a notched trowel from the line down.



Each mosaic tile is $\frac{3}{4}$ in. square, they are mounted on netting backing in 1 x 1-ft. sheets. Tiles are face up and sheets are pressed into mastic so it forces through netting to tile back.



With first row of tiles in place, the wall looked like this. Sheets of tiles were fitted snugly against door trim.



Register was removed, tile fitted around it. After tiles were grouted register was replaced. Sheets of tile can be cut apart to permit spacing rows farther apart when it is necessary to make up short space that is less than the full width of a sheet of tile.



Unusual effect was obtained by do-it-yourselfer in this bathroom by applying tiles diagonally, rather than horizontally.

the tile firmly. First step is to draw a level line at the top of the area that is to be tiled. A chalk line is fine for this. Mastic then is troweled on below the line. Each sheet of mosaic tile next is fitted in place and pushed firmly into the mastic. The rows of tile sheets can be applied either horizontally or vertically. In the example shown, when the next to last sheet was in place the remaining space to the baseboard was about $\frac{1}{4}$ in. more than the width of a sheet of tile.

Scissors were used to cut apart a few rows of tile so the spaces between rows could be widened slightly. After all tile had been applied, grout was wiped over them, and a squeegee used to remove surplus. A sponge and clean water removed the last excess grout except for a faint film that was polished off the following morning.

For the name of your nearest dealer in the mosaic tile described, or for a mail-order source, write: Korsin Mosaics, P.O. Box 144, Niles 48, Ill. $\Delta \Delta$



Risers and treads of this stairway, as well as wall of floor, are fitted with glass mosaic tile, making this a beauty spot.

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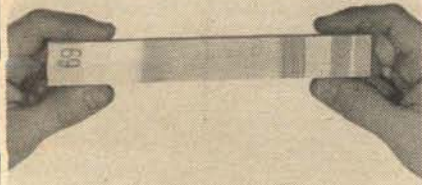
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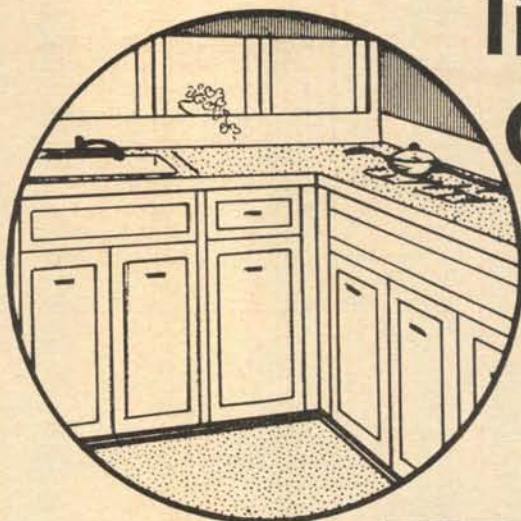
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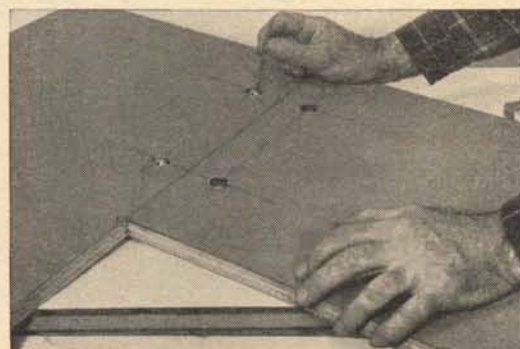
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32 « WORKBENCH

Tight Counter-Top Joints



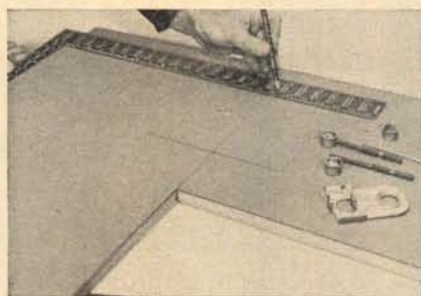
1. Fasteners are fitted in underside of counter top, tightened with pin wrench to draw joint together. Upper surfaces of tops are aligned flush before tightening; fasteners allow some movement for adjustment until completely tight.



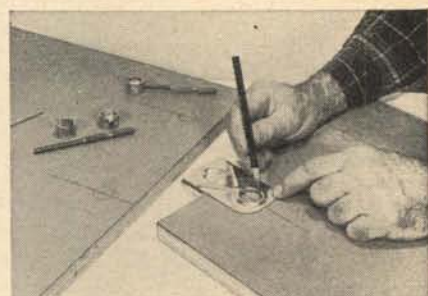
LONG COUNTER TOPS, especially those made in an L-shape, generally require two-piece construction, with a resulting joint. There is a fastener that makes it possible to draw together the edges of such a joint so as to make it almost invisible. In-

stallation of such fasteners is shown in the following photos.

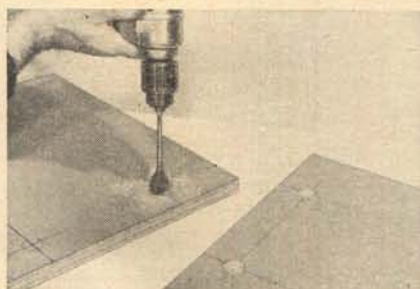
For the name of your nearest dealer, write to the Knap and Vogt Mfg. Co., Grand Rapids 4, Michigan and ask about "Tite-Joint" fasteners. Δ Δ



2. Make sure edges of counter top are cut clean and square, with plastic laminate applied. Use square to draw lines across joint 1 1/2 in. from each end, to mark fasteners locations.

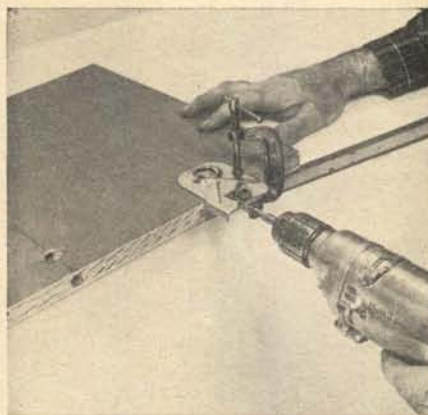
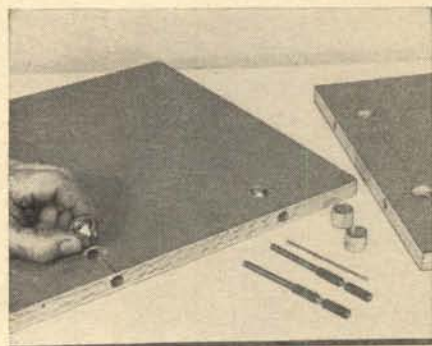


3. Use drill guide, (obtainable with fasteners), to mark positions of the 7/8-in. holes that will receive the Tite-Joint sleeves. Guide is designed to provide accurate positioning.

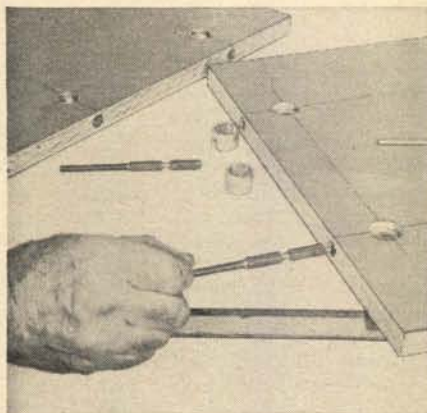


4. Hole is drilled with 7/8-in. bit to a depth of just 5/8 in. Special drill bit obtainable where fasteners are sold is shouldered so it can drill to a depth of only 5/8-in., to accept sleeves.

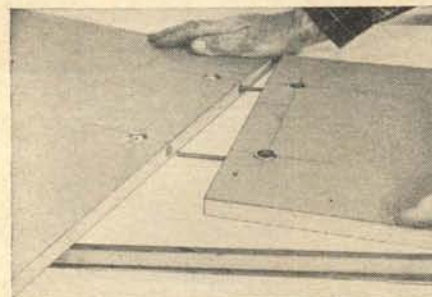
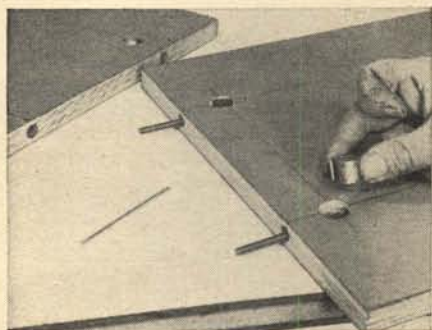
5. Drill guide next is positioned over each drilled hole, clamped in place. Edge of drill guide now is used to direct drill bit $7/16$ in. in dia. for boring holes in edge of stock to receive drawbolts.



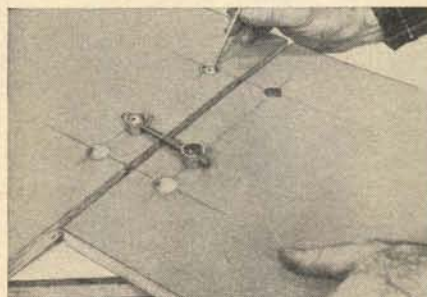
6. Collar sleeves with tightening nuts are dropped into $7/8$ -in. holes on one side of the joint. Two sections of counter top are placed on flat surface to permit accurate positioning of top surfaces.



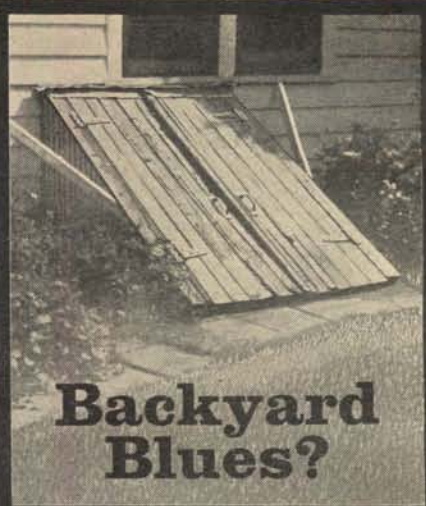
8. Second sleeves are now inserted in $7/8$ -in. holes so notch in sleeves fits over grooves in drawbolts. Note that holes are oversize for bolts; the bolts then can move slightly to permit adjusting surfaces.



9. Both panels now are pushed together so that drawbolts are engaged by the locking nuts. Shape of locking nuts aligns drawbolts so the threads of the bolts engage thread of the nuts quite easily.



10. Finally, pin wrench is used to pull up drawbolts so plywood panels fit together snugly, but still can be shifted slightly for alignment. When surfaces are flush and aligned, pin wrench is used.



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Refinishing

G. L. BIX

Last step in refinishing piano is to wipe it down with damp cloth to remove all sanding dust and foreign matter.

Our first Refinishing Clinic, in the March-April issue, has brought a flood of letters, many of them requesting information on the stain-removing chemicals we use professionally. Unfortunately, the use of these chemicals requires considerable training; using them incorrectly will ruin the wood. We are constantly testing paint removers and other materials and should we find one that can be used by the average home craftsman, we certainly will let you know. In the meantime we will try to show you how readily-obtainable removers and materials can be used to do a better job in your refinishing projects.

ONE OF THE SIMPLER stripping and refinishing jobs is our subject in this article; the renovating of a piano. Before you start objecting that refinishing a piano is a big job, and a difficult one, let me state my reasons for saying it is an easy one. First, a piano consists largely of flat surfaces. Second, normally the quality of the wood used in a piano is superior to that used in other pieces of furniture.

The photos show the step-by-step stripping and refinishing operations. First, of course, wheel the piano into a garage with a concrete floor, or onto a patio if the weather

is good, or to any place where the paint and remover will not damage the floor, and where the mess can be cleaned up easily. Even professionally we strip a piano in the customer's home, rather than taking it to the shop; the cost of hauling it to and from the shop would be more than the price for the stripping. Next step is to take off all the parts of the piano cabinet that can be removed easily. These will include the keyboard cover, the blocks at the end of the keyboard, the top, front panel, etc. These pieces are stripped away from the main cabinet, which means that the remover need not be applied to surfaces near the keyboard or mechanism that might be damaged by the chemical. Clean cloths are placed over the keyboard and mechanism to protect them.

Use a good quality paint remover and flood it on all surfaces. Give it ample time to work. When the finish has loosened, remove it from flat surfaces with a putty knife, use a stiff-bristled brush to clean carvings, turnings and the like. When the first application of remover and loosened finish have been wiped off, examine all surfaces for spots the remover has not completely cleaned. Apply more remover to these areas. Do not sand them; the sanded areas will absorb stain differently than the surfaces on which just remover has been used. (This answers one question that was in many letters.) Keep applying remover until all the finish has been removed. The original stain will remain in the wood, and if you want a lighter finish, bleaching is the only way the amateur has of light-



First step in stripping is to take off all parts readily removable so they can be stripped of finish away from piano.

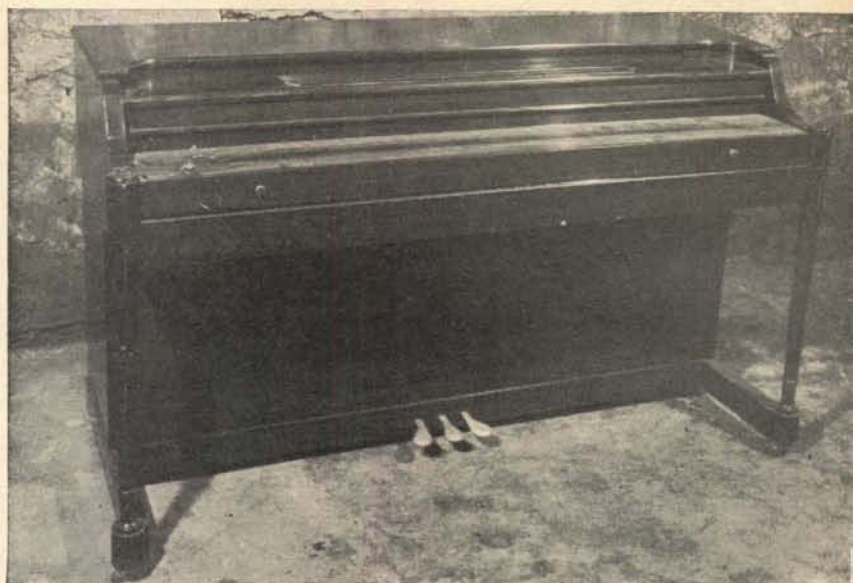


Keyboard and areas that could be damaged by remover are covered with cloths. Use plenty of remover, give it ample time.

(Continued on Page 59)

Clinic

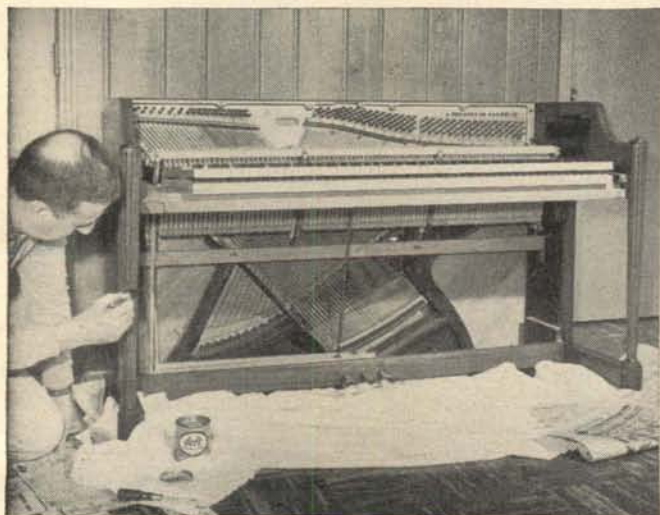
Like many an older piano, this one still has beautiful tone, but the dark finish is old-fashioned and is stained and chipped.



Flat surface of one of the removed pieces is stained first to check for color. If the color is not right, stain can be washed off piece much more easily than from the piano itself.



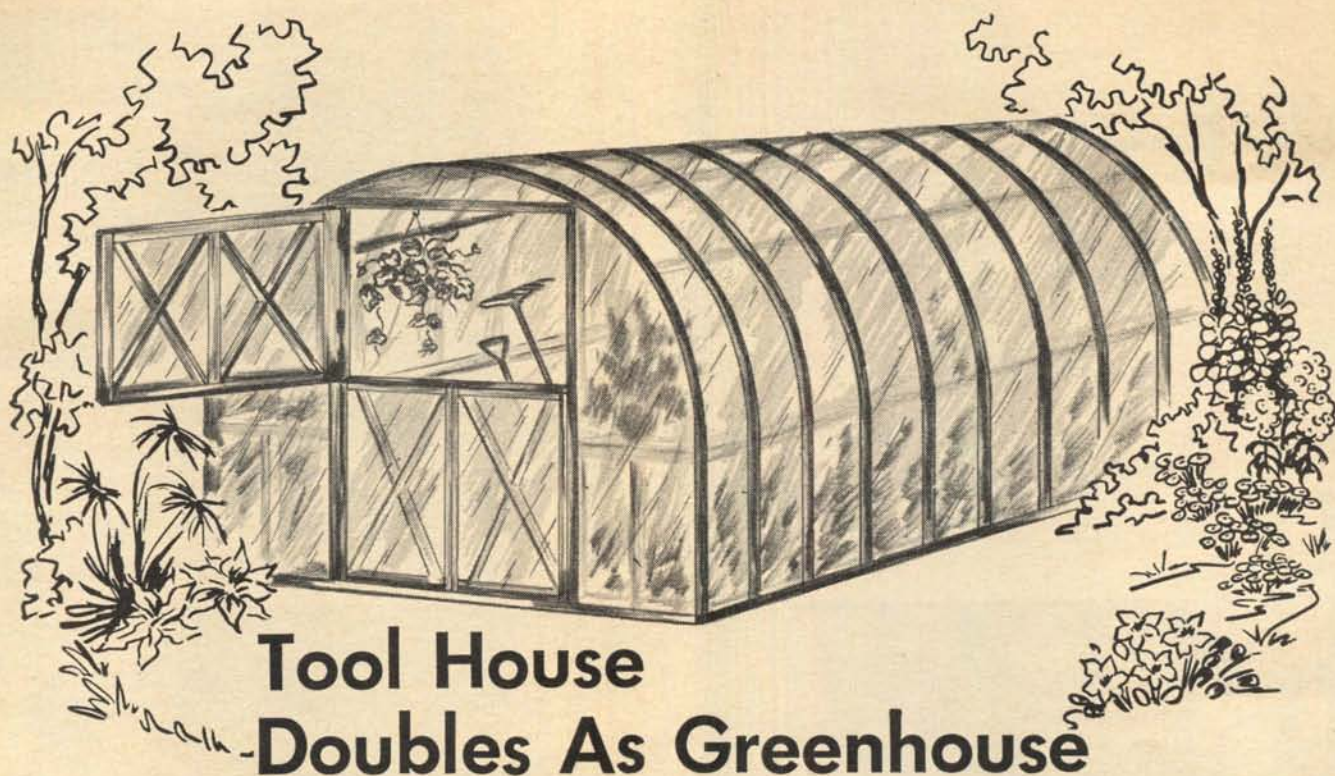
After removed pieces have been stained, main body of the piano is stained. In this instance a mixture of approximately 2/3 fruitwood stain, 1/3 walnut stain produced color desired.



After stain had been allowed to dry thoroughly, clear finish was applied. Each of the three coats of clear finish was allowed to dry about three hours, sanded lightly with wet-or-dry paper.



All pieces that had been removed are replaced, as well as all hardware. Make sure all pieces are cleaned so dust and dirt will not fall into mechanism, be careful with that screwdriver.



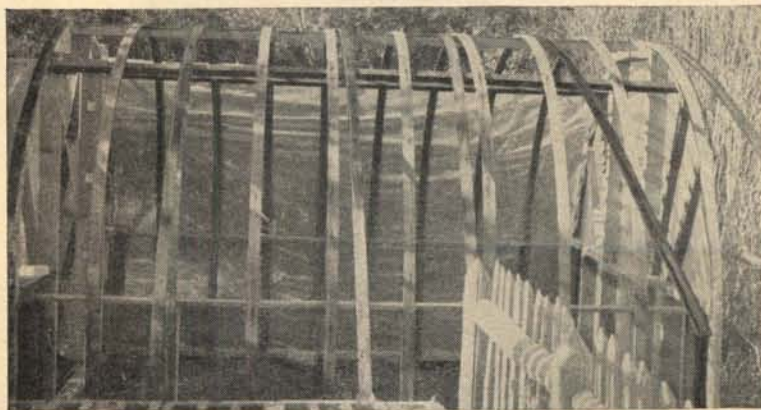
JACK EDWARDS

1. Basic structure is complete, diagonal bracing in end walls has not been installed, doors and window were fitted last. Floor could be concrete slab.

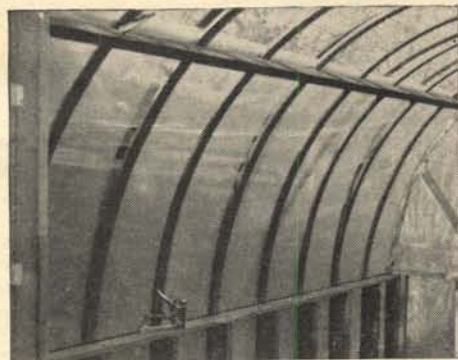
WHEN GARDENING EQUIPMENT challenged the car for garage space, I solved the problem with this low-cost tool house that doubles as a greenhouse. Short stud walls, Figs. 2 and 5, are joined at the ends by 2 x 4 sills, Figs. 1 and 5. Cedar posts lag-screwed to the side walls were dropped into holes, then the complete structure was leveled and squared. Soil then was compacted around the posts. Bows for the house were 3/16-in. strips ripped from rough redwood 2 x 8 planks. Double bows were applied first, then the plastic, finally single bows held the plastic. Start with the end bows, erecting them plumb and square. Lengths of 2 x 2 were wired to the tops of the bows and half way between the tops and the



2. Close-up shows studding of short walls, manner in which lower 2 x 4 in end wall is notched around end stud of side wall.



3. At this stage of construction inner double hoops have been installed, as well as single outer hoop, plastic is rolled up side ready for attaching.



4. Lengths of 2 x 2 are fitted on the hoops half way between ridge pole and top of studs to make hoops more rigid. Sheet plastic is rolled up over inside hoops, underneath outside hoops, is stapled to inner hoops.

STRIPS 3/16" THICK RIPPED FROM REDWOOD
2 x 8s 18 FT. LONG

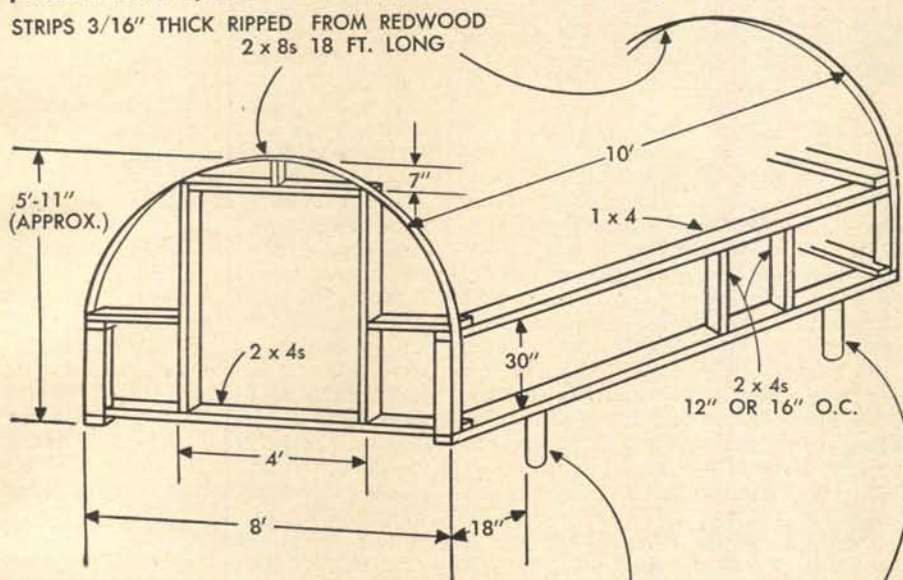
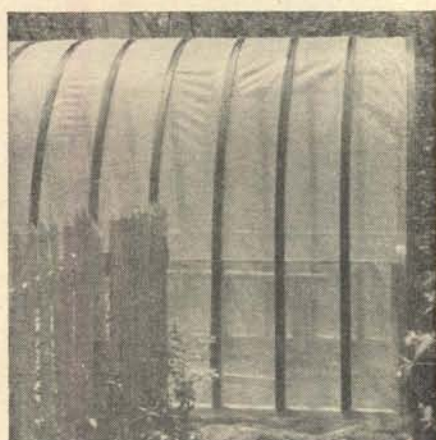


FIG. 5

CREOSOTED POSTS 6" DIA. x 24"



6. With strips fitted in place and screwed down firmly, plastic fits smoothly, structure is neat and attractive.

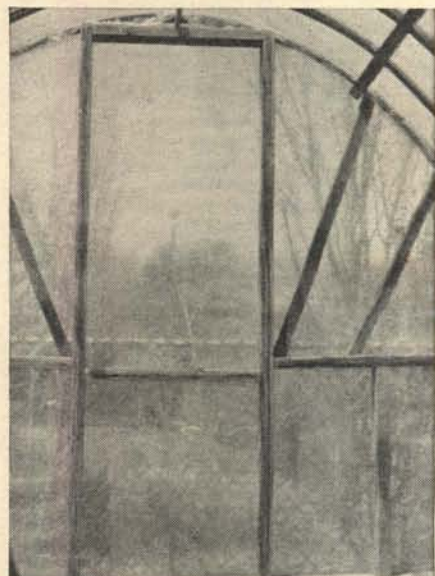
inforced with cotton-cord mesh for my replacement, believing it will have longer life. △ △



7. Front door is split lengthwise and horizontally, providing means for ventilation and passage for large equipment.

side walls to provide a "template" to assure all bows were identical. Framing in the ends was now done. A 4-ft. door, Fig. 7, at the front provides access for equipment and ventilation. A window, (we had one on hand) in the back wall provides ventilation, Fig. 8. When all inner bows were in place, Fig. 3, 2 x 2 strips were screwed to the inside faces of the bows and the temporary ones removed. The plastic was now started on one wall and the outer bows placed Fig. 3 and 4. As the plastic (at least 6 mils thick), a 20-ft. length of 10-ft.-wide material, is rolled up the hoops it is stapled in place, then the outer single hoops are attached with roundhead brass screws, Figs. 4 and 6. Plastic is stapled to the end walls, with no covering strips.

Because of the action of wind, weather and sun, the plastic will have to be replaced every year or so. I intend to use plastic re-



8. Back wall was first covered completely with plastic, then it was cut out to permit installation of window that was on hand.



CB ON THE FARM

Photos courtesy of E. F. Johnson Co.

When working near the farmhouse, moving from one piece of equipment to another, a hand-held CB unit does the job.

HOW WILL CITIZENS BAND RADIO aid the farmer, the contractor and others involved in outdoor operations? The very nature of these jobs requires reliable, readily mobile communications devices; CB transceivers fit these requirements exactly.

Today the farmer has a car, a truck, one or more tractors as well as other self-propelled machinery. He uses these vehicles on his and perhaps on the farms of his neighbors. Many times a costly, time-consuming trip could be saved if there were communications between these units. If, perhaps, while Mr. Farmer is using his tractor on a remote part of the farm and Mrs. Farmer needs him for something, she could call by radio. If Mr. Farmer needed help, or perhaps a repair part for his machinery, a call to the house, or perhaps the truck on the road, would bring the part or aid, and he would not have to travel possibly several miles back to the farm house.

If the farmer did not finish a job when he expected to, a call to the house would let the family know so they would not worry. Maybe a hired man was on the tractor and was needed back at the house or barn, or on another part of the farm. He could be called by radio. These and many other situations would make the use of radio on the farm contribute to greater efficiency and convenience. Storms and high winds sometimes cut off lights and telephones. In these cases mobile radio could prove invaluable, keeping the farm in touch with the rest of the world.

The radios selected for farm communications must be chosen with care, because terrain, the distances covered and the types of vehicles used, would determine the equip-

ment needed. It would be wise to consult a licensed communications man who would be happy to advise.

Because of variations in supply voltage (120 in the house and barns, 6 or 12 volts on cars, trucks and tractors), the units must be able to be quickly converted to accept the various voltages. In view of the high degree of mechanization on modern farms, the units must be able to discriminate against noise. This is true particularly when a unit is mounted on a tractor that produces both radio-frequency noise, (in the ignition and electrical system), and a high degree of

physical noise. The units must be able to receive the desired signal over the noise level. This means the receiver section must be sensitive to signal and limited in response to noise. It also should be selective enough to reject undesired signals, as from channels adjacent to the one being used.

Transceivers used on the farm usually must be quite portable, (a unit on a tractor would be removed and stored in the house or barn to keep it out of the weather when not in use), therefore they must be rugged and resistant to damage from vibration and shock. Also, they should be easy to mount and dismount. Quite often radio servicemen will be several miles from the farm, and this makes it desirable to have units that employ tubes that are readily available, tube replacement being the most frequent repair required, as is the case with radio and television sets.

When the transceiver has been selected it then is necessary to choose antennas and locations for the units. It is desirable to mount the transceiver close to the power source so that it is not necessary to use a very long extension cord, and the antenna site should not require extra-long transmission lines. The location of the unit in the house would be determined by where it was most accessible to the house-



Base unit in the farmhouse is located in the kitchen where wife spends most of her time; telephone also usually is located here.



When a farmer, or anyone, is out hunting, portable unit keeps him in touch with farmhouse, provides means of calling for help.

wife. Car, truck and tractor installations should be within easy reach, but not in the way of, the operator.

The antenna for the house should be of the grounded type, or a lightning arrester should be used. The antenna should be mounted in the clear. The mobile antenna will be more satisfactory if of the short, high-efficiency type, because of the great amount of foliage encountered on a farm, and the rough terrain traversed. All antennas, connectors and transmission lines should be weatherproofed to reduce the incidence of failure of the system at these points.

The noise and interference problems that may be encountered can be explained, and many of them eliminated, by a licensed technician. After the system has been completely installed and checked, the best results can be obtained by a simple procedure. The mobile units will travel over the routes

or terrain usually covered, and the points of best communication determined. These locations should be used when possible. Also note those areas in which communication is difficult. Avoid these spots. Radio waves at CB frequencies travel much the same as rays of light, therefore if hills or other objects are in the way, there will be areas of "shadow," or low signal, and also points of brilliance, or high signal. Sometimes areas more distant from the base unit will be better than areas close in, for reliable communications.

Many businesses that supply the farmer, (lime spreaders, fuel suppliers, feed and grain companies and many more), use two-way radio successfully and we feel that farming being the big business that it is, also can benefit from low-cost CB radio communications.

Building contractors with men and equipment scattered over a



Constant communications between house, car and pickup truck are assured with CB radios mounted in mobile units.

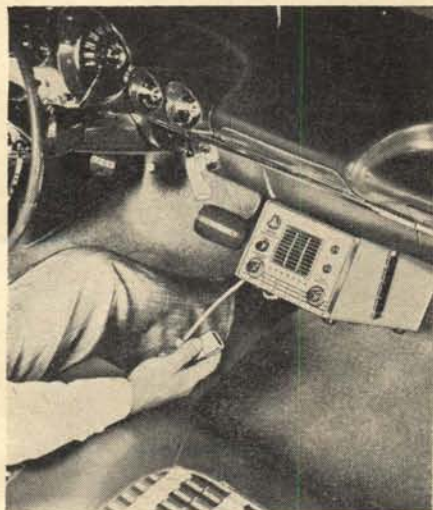
wide area can use CB radio in much the same way as the farmer. Men, repairs, supplies, all can be dispatched to various jobs by radio, saving hours of time and travel.

Our thanks to CB News for telling their readers that WORKBENCH now has a CB department. Anyone wishing a free subscription to this fine all-CB publication write to: W. A. Tabberer, Ed. CB News, 804 W. 89th Terr., Kansas City 14, Mo. Δ Δ

TEST REPORT

INCORPORATED IN THIS TOP-QUALITY CB transceiver is a standard AM broadcast radio. This means you can buy a car without a radio, then install your CB transceiver and radio as one unit. The AM radio ups the cost of the transceiver only about 20 dollars, which means a saving of around 40 to seventy dollars as compared to the cost of a regular car radio. According to Part 19 of the FCC regulations, an AM receiver must be on when a CB transceiver is being used, to make sure there is not a Conelrad Alert. With the CB unit described, you can listen to the transceiver, then, before transmitting, snap the switch to AM to check for an Alert. The Kaar TR327A CB unit lists at \$199. For

the name of your nearest dealer write to: Kaar Engineering, 2995 Middlefield Rd., Palo Alto, Calif.



While design of some cars and pickup trucks permits CB radio to be mounted to left of wheel, most are center-mounted.



New KAAR unit has AM broadcast band incorporated with CB transceiver, eliminating need for broadcast radio in car.



Large panels of plywood or particle board, longer lengths of lumber, can be handled easily on a table or radial-arm saw with the aid of this adjustable horse.

Adjustable Sawhorse

HARRY HARRIS

THIS SAWHORSE IS READILY adjustable for height, and the top can be angled to keep it level and flush with a saw table when the horse is sitting on an uneven surface. The top member is a wooden roller turned on a lathe, or may be purchased from some lumber dealers. The top also may be a length of 1 x 4 on which are fastened a number of casters; they permit easier control of wide panels. The horse is simply glued and nailed together,

which permits it to be knocked apart and transported to a job where it then can quickly be re-assembled. Stock sizes of lumber are indicated, but scrap lengths of any size lumber can be used.

As mentioned in the article on cutting plywood panels, support must be provided for such panels in front of the saw table and behind it; this means that a pair of these horses should be built; one would not be of much help. $\Delta \Delta$

$\frac{1}{4}$ " X $3\frac{1}{2}$ " LAG SCREW,
HEAD CUT OFF

3" DIA. X 20" LONG

ALTERNATE CONSTRUCTION

$\frac{1}{4}$ " CARRIAGE BOLTS

1 x 4s

WASHER AND
THUMBNUIT

5" O.C.

1 1/2"

27"

1 x 3s

1 x 4s

1 x 2s

22"

22"

24"

REGULAR OR BALL-TYPE
CASTERS

Big advantage of this horse is that besides adjustment for height, top can be angled to keep it level with top of saw table, in the event floor is not level.



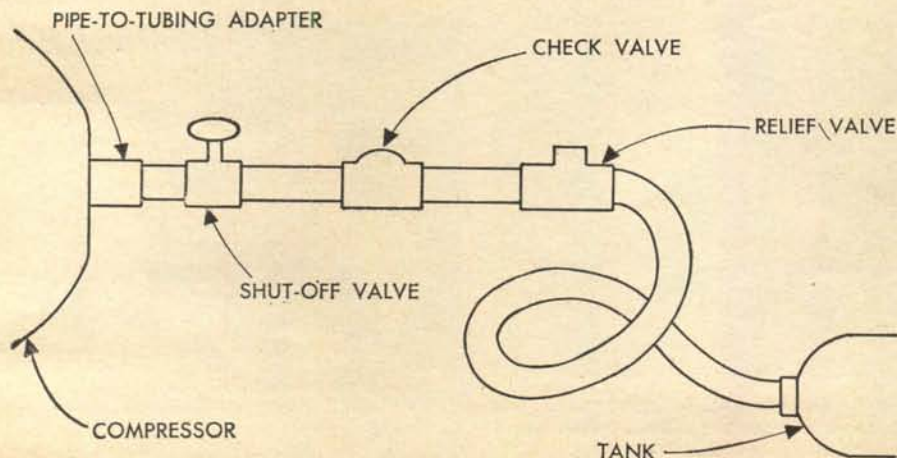
Compressor Storage Tank

GEORGE F. BURNLEY

GET MORE USE out of your home-shop air compressor by fitting it with a storage tank. The tank reduces the pulsations produced by diaphragm-type and smaller piston-type compressors, and permits the use of a blow gun that is handy for blowing dust from small items and for quick-drying parts washed in cleaning fluids. A more even flow of air for paint guns also is provided.

A tank for this purpose can be picked up at war-surplus outlets at reasonable cost. Most home-shop compressors produce about 30 to 50 p.s.i., which is well below what tanks of this type were designed to hold. Ends of the tank—which can be any of a number of shapes and

sizes—may have to be drilled and tapped, or a fitting brazed on, to accept a tubing or hose fitting. If your compressor is not equipped with a relief valve, install one as indicated. This will prevent overloading or stalling the compressor motor. Set the relief valve to open just below the maximum pressure produced by your own unit. A check valve in the system will keep air in the tank when the compressor is not running. A shut-off valve will, if course, do the same thing but you do not have to open and close a check valve manually. The shut-off valve is used when the compressor is to be used elsewhere, and the tank stays in the shop. △ △



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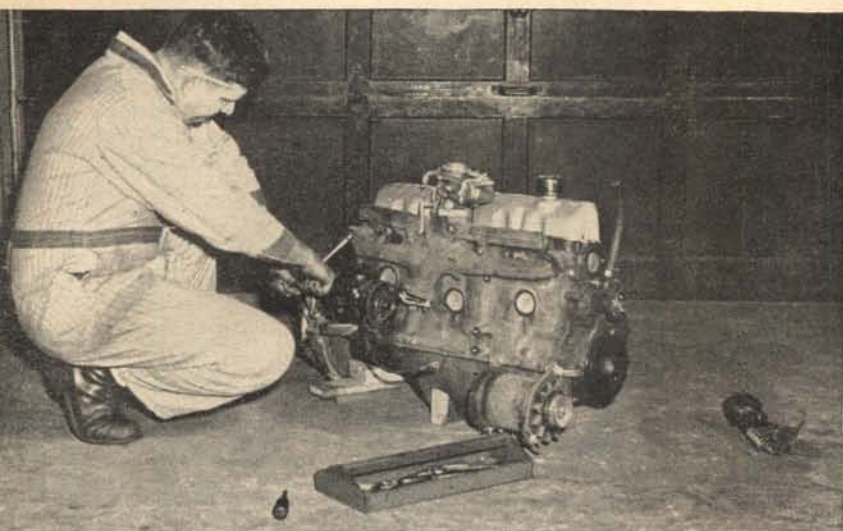
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- Please send full information on the opportunities available to me as a distributor.

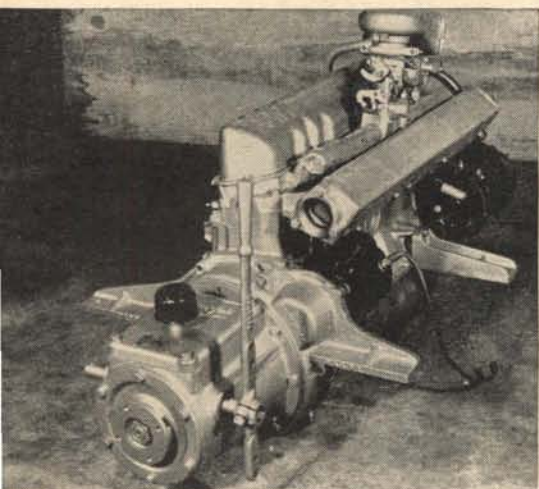
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ADDRESS _____
CITY _____ ZONE _____ STATE _____



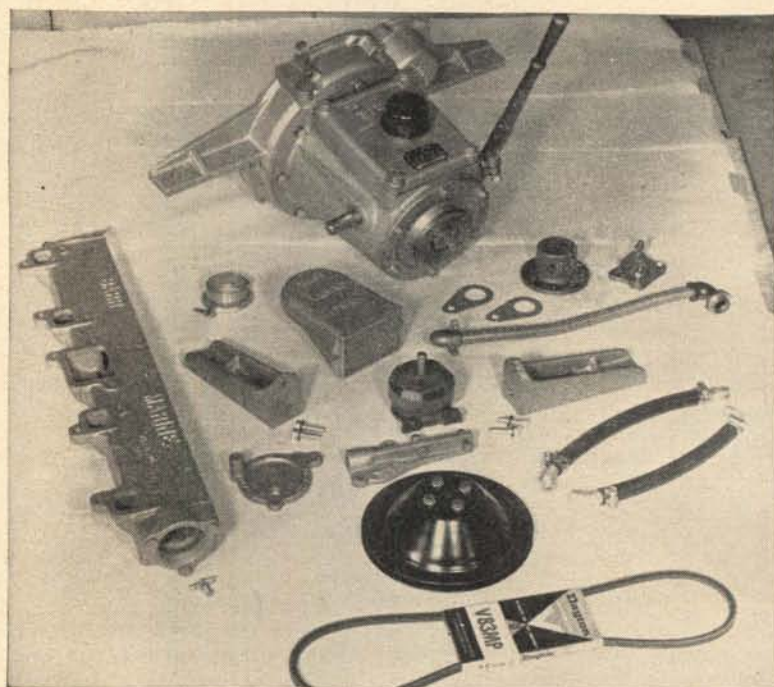
With engine blocked upright on floor, first step is to remove exhaust manifold. Note engine has all accessories.

Make Your Own Marine Engine

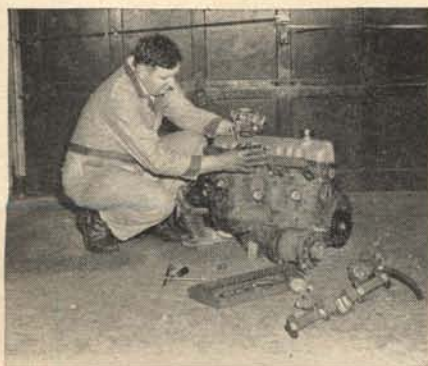
Photos Courtesy Barr Marine Products Co.



Here engine has been completely converted for marine use. Engine and accessories have been cleaned and painted.



Spread out here is complete conversion kit for Ford Falcon and Comet engines. Kits for other engines are available.



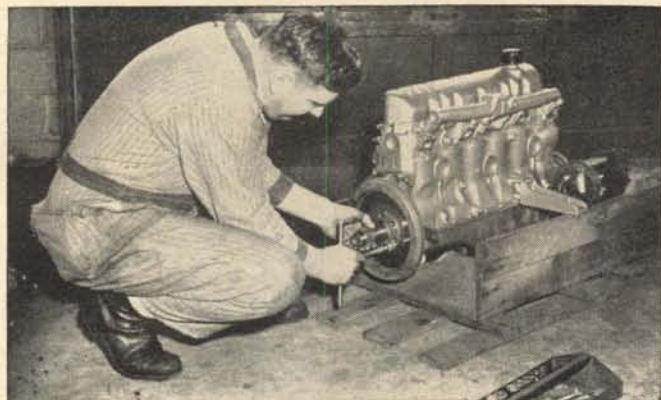
Flywheel housing and clutch, (if standard transmission), water pump, carburetor and all accessories are removed.



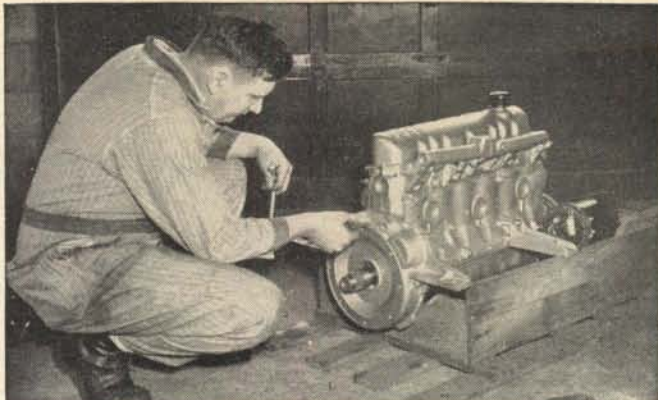
Regular "freeze" plugs are removed, are then replaced with corrosion-proof brass plugs that are provided with the kit.



Engine block is cleaned, sprayed with aluminum paint for best appearance. Plug any openings to keep out paint.



If light flywheel for automatic transmission is on engine, replace it with heavier unit for standard transmission. Next, bolt drive flange for marine reverse gear to flywheel. This operation should be done carefully.



Bolt on marine-type flywheel housing of which motor mounts are integral part. Note also that front motor mounts have been bolted to the block. Support engine on makeshift stand, or bolt motor mounts to two 2 x 4 planks.

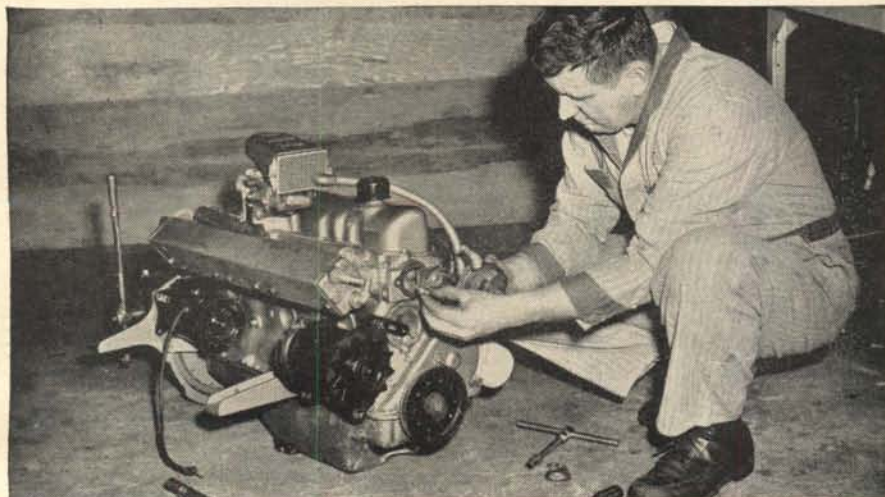


Bolt marine reverse gear in place. Shown is Paragon direct-drive unit. Variety of reverse and reduction gears are available.

THERE ALREADY ARE MANY late-model compact cars in junkyards, and while the bodies are little better than scrap iron, many of the engines are perfect. Here is a fine opportunity for the amateur boat builder to obtain a lightweight, snappy inboard engine with the aid of a marine-conversion kit.

When buying an engine, be sure to get the starter, generator, voltage regulator, distributor, carburetor and all accessories. Also, pick

your engine from a car that has not been hit head-on; this type collision almost always damages the engine. The engine shown being converted in the step-by-step photos in this article is the unit used in Ford Falcons and Comets. It is available in 90 and 105 H.P. models. Kits for other compacts, as well as engines from larger cars, are available. First, however, before buying an engine, get a catalog from a kit manufacturer to be sure a kit for that engine is available. The conversion kit shown is available from: Barr Marine Products Co., 2700 E. Castor Ave., Philadelphia, Pa. Δ Δ



Water pump with rubber impeller replaces automotive-type pump. Water lines are run from pump to exhaust manifolds and to the block. Water lines are provided.

NOW! hi-compression
staple gun

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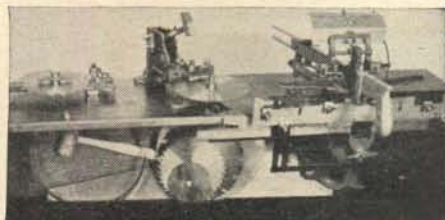
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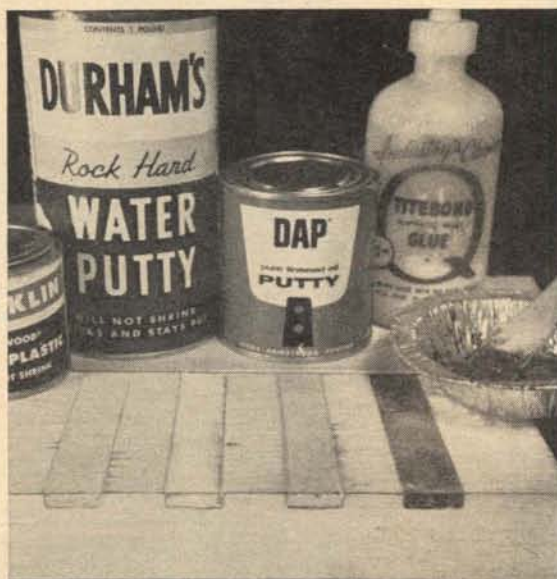
A. ZAPART

586 Manhattan Ave.

Brooklyn 22, N. Y.

MAY-JUNE, 1962 » 43

Putty: Craftsman's Friend

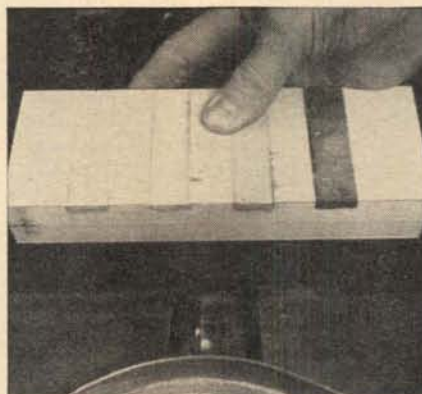


From left to right, in containers and in dadoes cut in board: Ready-mixed putty, water-mix putty, glazier's putty and putty made from white glue and wood dust. Metal container turned glue-putty dark.

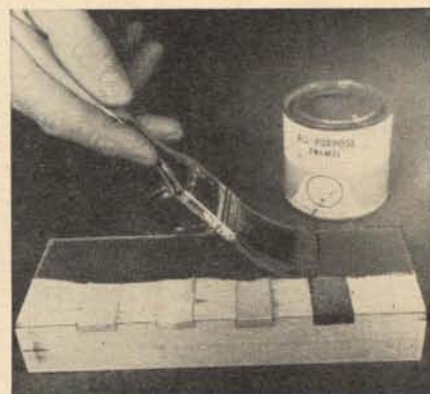
GLAZIER'S PUTTY is probably the best known of this family of materials, being used for calking, setting glass and filling large blemishes in wood to be painted. There are three other general types of putty: Plastic, ready-mixed types available in various colors, powdered material that requires mixing with water and finally the kind made by mixing wood dust and white glue. All but glazier's putty can be used for making inlays, for replacing portions of carvings and for lengthening a short leg of a piece of furniture. Ideas shown in the photos will suggest many more uses. Some of our advertisers who specialize in woods and special furniture hardware have putties that will match the color of almost any kind of wood. We would suggest that every home workshop have a supply of the three manufactured types, plus glue for the shop-made type. $\Delta \Delta$



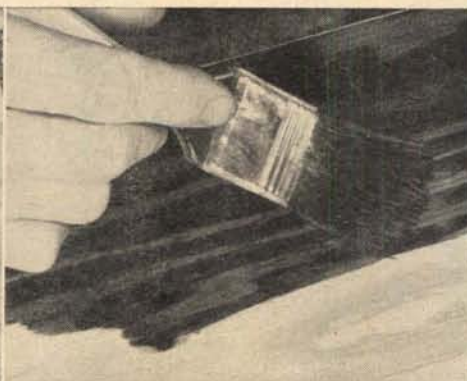
Dadoes were filled flush with various types of putty; note that all saw cleanly. No attempt was made to match color of the wood, so putty would show clearly. Blade must be sharp.



When stock is planed or run over jointer-planer all putties machine smoothly, but glazier's putty scuffs slightly; it is not used generally for filling wide areas, will remain plastic.



Applying paint over any of the four types of putty almost completely conceals their presence. Paint adheres well and there is no need for sealing putty before the paint is applied.



Ready-mixed, plastic-type putty is available in various colors, in light, medium and dark shades. It does not shrink, adheres well and readily accepts stains to match wood. Ideal for repairing and making furniture.



When filling in large areas with any type putty, drive short nails or tacks into patch area to "anchor" putty to wood. Apply the putty in thin layers, allow each layer to set to prevent warping.



To lengthen short leg of chair or table, apply putty, set chair level, allow putty to set. If $\frac{1}{4}$ in. or more is required, drive nail into leg to reinforce putty. After putty sets, file and sand smooth.



When caster comes loose, fill hole with putty, then slip sleeve and caster together into hole, allow putty to set. Sleeve should stay, caster then can be removed without loosening the sleeve.



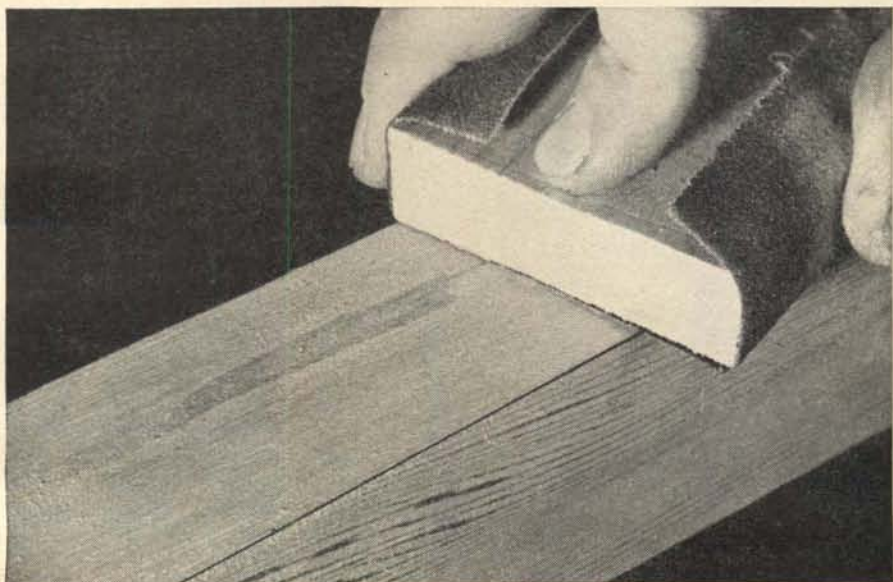
To mix homemade patching putty, mix white glue and wood dust on wooden surface with wooden or plastic stirrer. Avoid use of metal container or stirring rod, as metal will react with glue and darken mixed material.



Plastic scraper, such as used for cleaning ice from car windows is good for mixing homemade putty. Putty looks dark when glue is wet, will lighten as glue sets and dries. Remember to avoid the use of metal container or tools.



Pack homemade mixture firmly in blemish, build it up above the surface. When it has set, sand flush with surface. Plastic scraper can be used to apply the glue-dust mixture, as well as to mix it and "trowel" it smooth.



After final sanding patch is barely noticeable. Careful use of stain, avoiding over-staining of patch, will blend the repair even more completely into the final finish of the job.

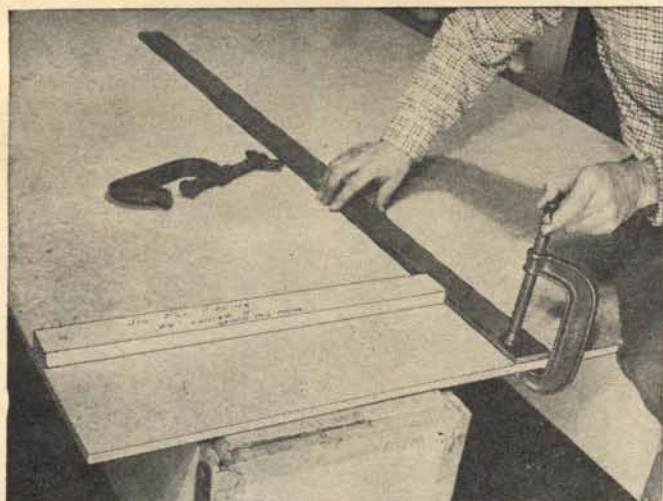
1. To cut 4 x 8-ft., or larger, panels of plywood or particle board, support them on two rows of crates such as used for milk or soft-drink bottles. Keep crates clear of cut.



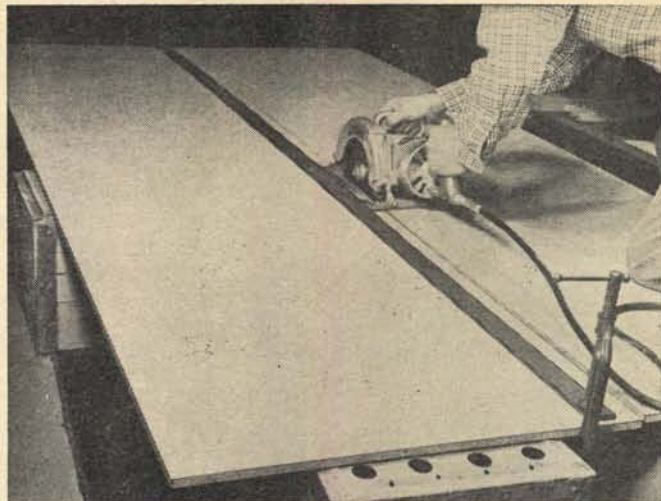
Cutting Plywood Panels

YOUR BIGGEST PROBLEMS when building kitchen cabinets, (as well as many other ambitious projects), is the handling and cutting of large—usually 4 x 8 ft.—plywood and particle-board panels. Ripping an 8-ft. panel requires a length of 20 ft.; 8 ft. in front and back of the saw blade, plus room for you to stand. If you have this much room in your shop, or have an area of the basement or garage that can be used, you still will need supports in front and back of the saw table. An adjustable “horse” with a roller or casters on top can be assembled in a short time and can be used for years for handling the plywood panels and longer lengths of lumber. One such “horse” is described in another article in this issue.

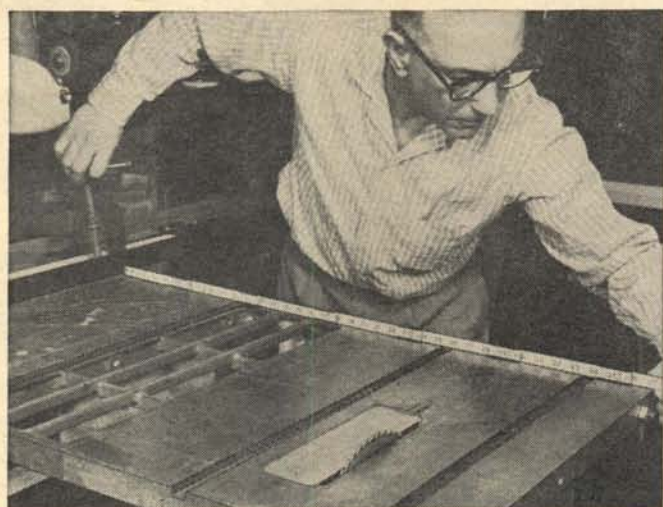
2. Mark the cutting line with a straight-edge, then measure the distance from the blade to the edge of the saw shoe. Remember to allow $\frac{1}{8}$ in. for kerf, if halves are to be uniform.



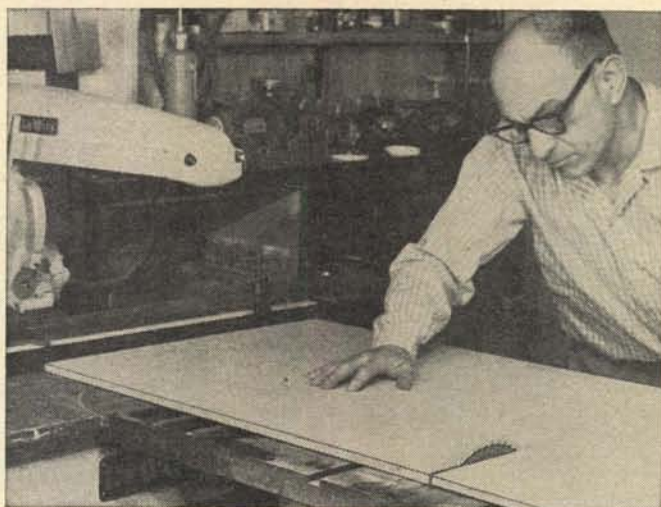
3. If you will be cutting a number of panels, cut a piece of scrap stock as a jig to position the straightedge. Clamp down one end of the straightedge, repeat at other end.



4. Saw runs easily along straightedge guide, while spaced boxes support your weight as you move along with the saw. Remember to keep the good side of the panel down.



5. If you have both radial-arm and table saw, table of radial-arm unit can be used to extend cutting capacity of table saw. Clamp straightedge to the radial-arm table.



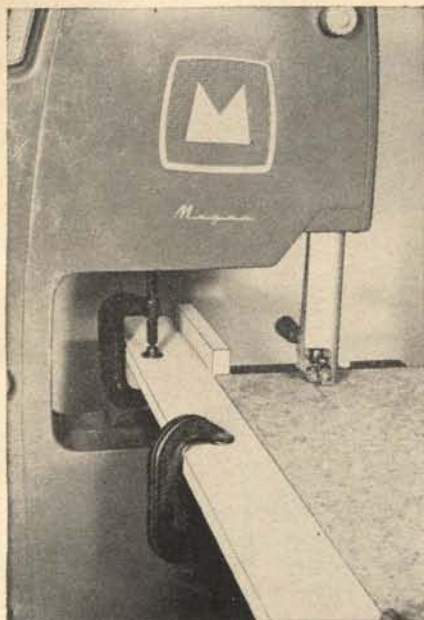
6. Combination of the two saw tables provides firm support for panel, it is moved easily over blade of table saw. Be sure to keep end of panel firmly against straightedge.

If you do not have the room inside the shop or garage, you can take your table or radial-arm outside to do the ripping. It is a good idea to lay out your work so that all the ripping of long stock can be done at once. This will eliminate the need for hauling your saw outdoors more than once for a job.

If inclement weather prevents you from taking the saw outdoors to do the ripping you can use a portable circular saw to rough-cut the panels to size. You first will need about six crates or small horses all the same height, Fig. 1. In the setup shown crates originally used for milk bottles were borrowed from a local store. Glass bottles are not used as much as in the past and it might be possible to obtain such crates from a dairy. If not,

assemble a number of plywood boxes of the same height. The boxes need be only high enough to prevent the saw blade from contacting the floor. Mark the centers of the ends of the panel and draw a line with the aid of a straightedge. Next, measure the distance from the saw blade to the edge of the shoe, Fig. 2. Mark this point at each end of the panel, then clamp the straightedge between these points. When cutting a number of panels a simple jig, Fig. 3, can be made to speed up the job. This is a scrap of stock cut to the length that will position the straightedge the correct distance from the edge of the panel to permit using your portable saw. Be sure the piece of stock you use for a straightedge is wide enough or thick enough so

that it will not bend when the saw is held against it. The straightedge can be clamped to the stock only at each end. A few brads driven through the center of the straightedge and part way into the panel will help prevent it from shifting during the sawing. Use of the brads is possible because the good side of the panel must be down when cutting with a portable saw. This is because the rotation of the blade brings the teeth into the bottom of the stock first. This also is true when ripping with a radial-arm saw. The good side of stock should be up when cutting on a table saw, band saw, portable saber saw, and when pulling a radial-arm saw through the stock on a cross-cutting operation. Note that the supports under the panel should be posi-



7. When large panels are cut with a band saw, a guide is needed at edge of table and blade guard must be positioned low to prevent twisting of the blade. Stop-block is on this particular setup.

tioned to clear the cut and to support your weight as you move along with the saw, Fig. 4.

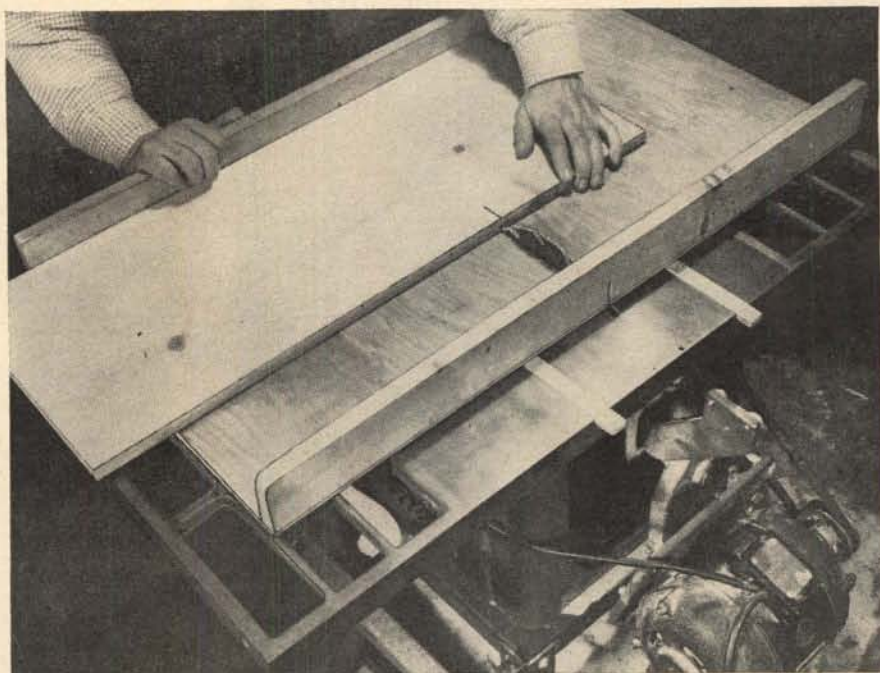
If you have both a table saw and a radial-arm saw the table of the latter can be used as an extension table for the table saw. The straightedge is clamped to the table, Fig. 5, at the proper distance from the blade. Use of the two saw tables is especially handy when crosscutting a fairly long piece of stock, Fig. 6.

A band saw can be used for ripping large panels. A guide strip—"rip fence"—is required, the blade should be the widest that can be used and the blade guard must be

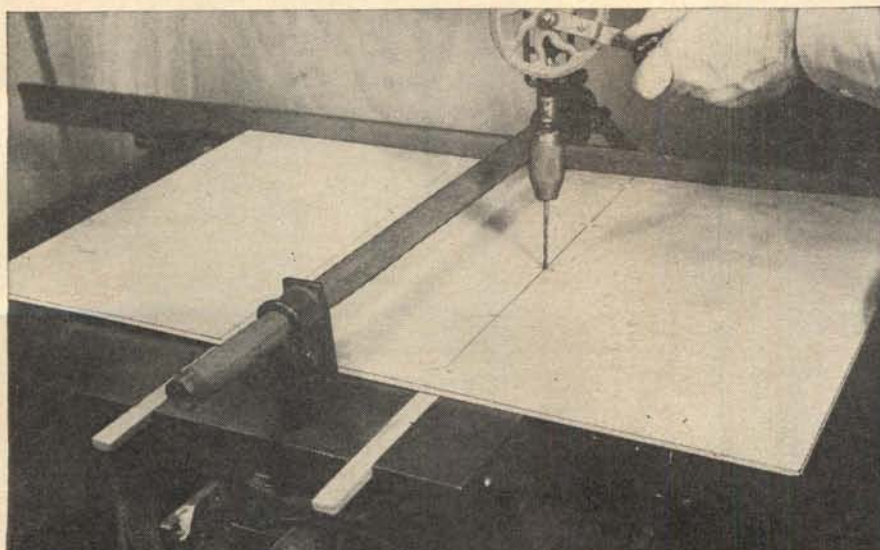
positioned as low as possible to prevent the blade twisting, Fig. 7.

Crosscutting stock up to 18 in. wide is no problem on a table saw with the aid of a simple jig, Fig. 8. The jig consists of a piece of $\frac{1}{4}$ -in. plywood as wide as the saw table and 19½ in. long. The latter measurement is 18 in. plus two thicknesses of 1-in. stock, meaning the lengths of 1 x 2 glued and screwed to the front and back edges of the plywood. Two strips of hardwood, with cross sections identical to the

miter-gauge guide, are fitted in the grooves and the plywood squared with the table and clamped in place. Pilot and clearance holes are drilled for flathead screws, Fig. 9 while the plywood is clamped in position. After attaching the guide strips the 1 x 2s are fastened in place and the jig run over the saw with the blade projecting just enough to cut $\frac{3}{4}$ -in. material, Fig. 8. The plywood and the two 1 x 2s will be cut, remaining stock on the 1 x 2s keeps the jig aligned. $\triangle \triangle$



8. Cross-cutting capacity of any table saw can be increased by the use of this easily made jig. Bottom is good-quality $\frac{1}{4}$ -in. plywood, strips front and back are straight-grained soft wood. Runners that slide in miter-gauge grooves are cut from hardwood, smoothed to slide easily.



9. To make a jig, fit strips in miter-gauge grooves, clamp squared plywood flush with edge of table, drill pilot and clearance holes for driving wood screws.



Installation of air purifier takes only a matter of minutes. First step is to mark opening in duct.

ELECTRONIC AIR PURIFIER

QUITE REMARKABLE is the best way to describe this electronic device that utilizes an ultraviolet lamp to deodorize and sterilize the air in a home. Installation requires only minutes; a hole is marked and cut in the cold-air duct of a forced-air furnace, a hole drilled or punched to accept a sheet metal screw and the unit is slipped in place.

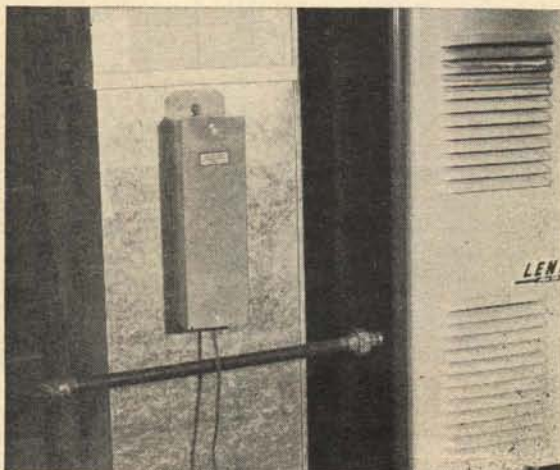
The unit can be plugged into any convenient outlet, or better still, wired into the blower circuit of the furnace so it goes on only when air is being forced through the system. In our tests we noted that even cooking odors, such as cabbage and fish, would be gone in a short time. Everyone in the family said they slept better, felt better in the morning. To make this a real test, the

Sanitaire unit was disconnected for two days and nights without informing members of the family. They immediately complained of sleeping poorly, arising with "stuffed heads and noses."

The Sanitaire unit contains an ultraviolet lamp that actually oxidizes the elements that cause odors, and kills air-borne bacteria. The lamp in the unit will operate for about 7500 hours, which is a full year, and at pennies a day. After several months of testing, we give our "Workshop-Tested Seal" to the Sanitaire unit.

The Sanitaire Model F-1, the home-size unit, is \$49.95, complete with the ultraviolet lamp, from the Atlantic Ultraviolet Co., 24-10 40th Ave., Long Island City 1, N. Y.△△

One screw in top flange of unit holds it in place, then wire is run to convenient outlet or to blower circuit.



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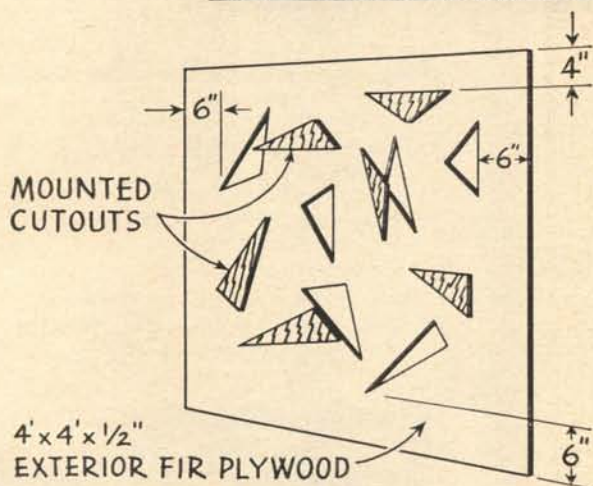
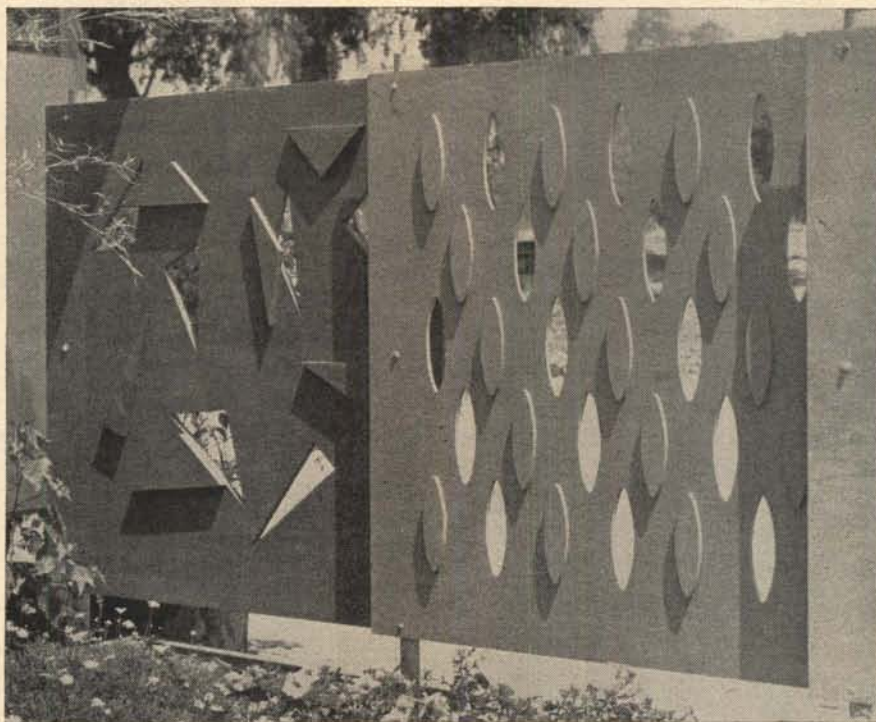
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SEND CHECK OR M. O. SORRY, NO C.O.D.

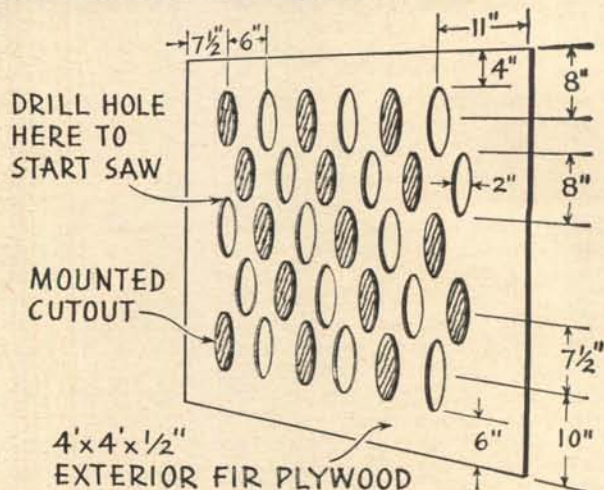
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Cut triangles of different shapes and sizes in random pattern from plywood after drilling $\frac{1}{4}$ -in. hole for each to permit starting cuts with portable jig saw.



Dimensions for ellipse pattern are shown in drawing. Oval-shaped pieces then are remounted on panel, as are triangles in other panel, by using glue and nails.

PLYWOOD FENCES

WHEN OUTDOOR LIVING in the summer makes your patio a true "outdoor living room" you will need walls for privacy and protection against sun and wind. While conventional fences will do the job, a little imagination and some plywood panels can make your yard, or patio, a real conversation piece. You may need only a couple of panels to form a screen on one or two sides of the patio. Any of the ideas shown can be used in this manner. If you wish a complete fence around your

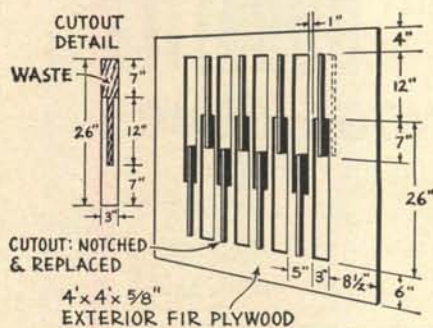
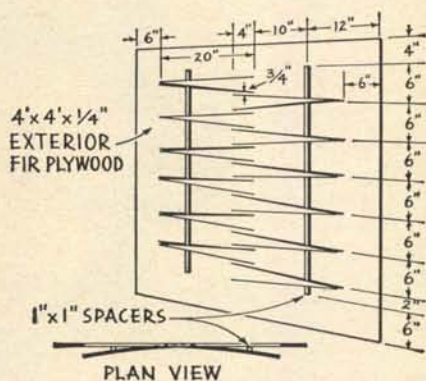
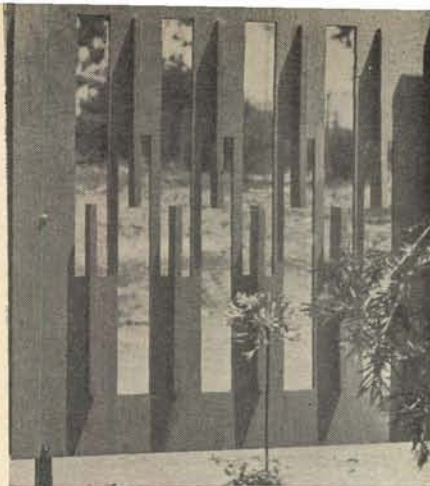
yard, one kind of panel can be repeated all the way around, or two or more patterns can be alternated.

The only tools required are a $\frac{1}{4}$ -in. drill motor, used to drill pilot holes to permit starting a portable electric jig saw, and the saw. A portable circular saw also can be used; it can be handled to make "pocket cuts" so that no pilot hole is required. You will note, however, that in some cases the pilot holes are part of the visual pattern.

The panels can be stained,

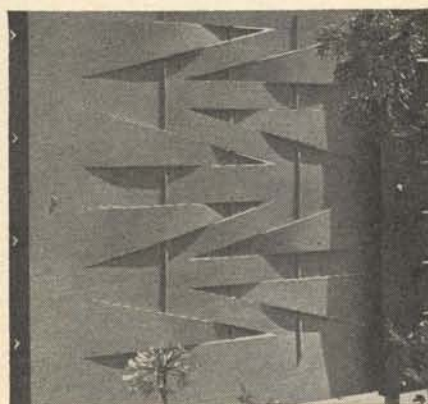
finished with clear sealer, even painted in bright contrasting colors. All plywood used for the fence panels should, of course, be exterior-grade material. Use aluminum nails to avoid rust problems and the glue should be a quality waterproof adhesive. Regular posts, lengths of pipe or 4 x 4s may be used as supports.

For information on even more plywood-panel fence designs write to: Douglas Fir Plywood Association, 1119 A St., Tacoma 2, Wash.

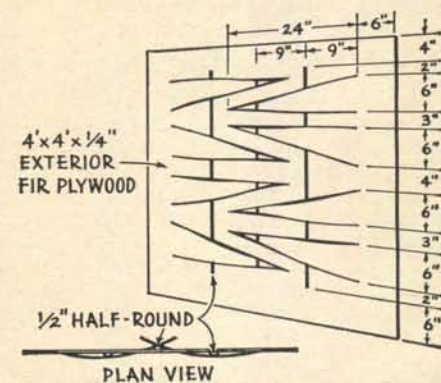


Woven, or twisted, pattern is made by cutting design in plywood panel and inserting 1-in. redwood garden stakes.

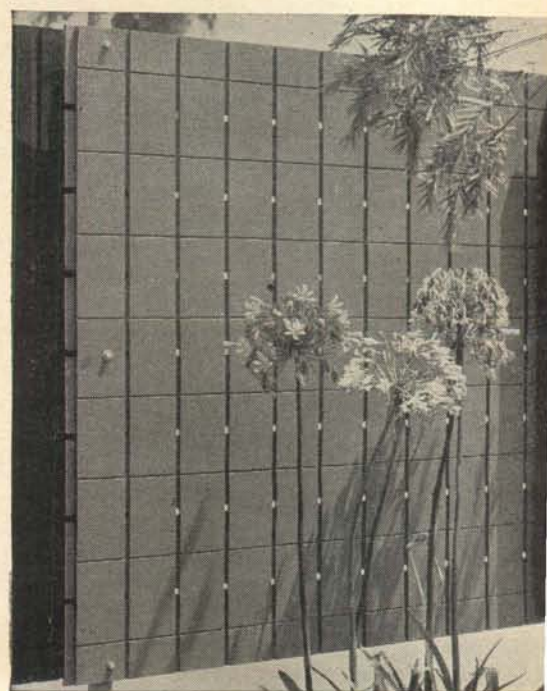
Abstract design in this panel is result of cutting U-shaped sections from panel. Waste is removed, sections replaced.



This pattern is made by cutting dadoes 4 in. apart. Horizontal cuts are $\frac{1}{8}$ in. wide, $\frac{3}{8}$ in. deep. Cuts on opposite side are $\frac{1}{2}$ in. wide, $\frac{3}{8}$ in. deep.



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Women's Page

PHILLIP RUSH



Don't get blurry-faced trying to shut off a leaking faucet, replace the washer. Find out where the water can be shut off, then obtain a supply of washers at a hardware store. Now, shut off the water.

DRIPPING FAUCETS CAN BE annoying, and drips eventually become full-size leaks that waste water. Tools required to repair a leaking faucet are a screw driver, pliers and adjustable wrench. The jaws of the latter are smooth, but apply a strip of adhesive tape as added assurance that you will not scratch the chrome plating on fixtures. Faucets leak in two ways: through the valve seat so that water drips out the faucet, and through the packing gland around the stem, which allows water to run out around the stem. In the step-by-step photos is shown the procedure for repairing each type of leak. △ △



After the water is shut off, open the faucet to drain pressure. Next, use wrench to remove large, hexagon-shape nut, turning it counter-clockwise. If it is stuck, give wrench handle a smart rap.

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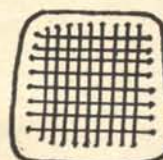
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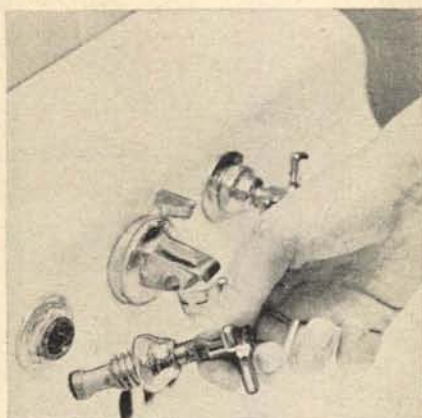
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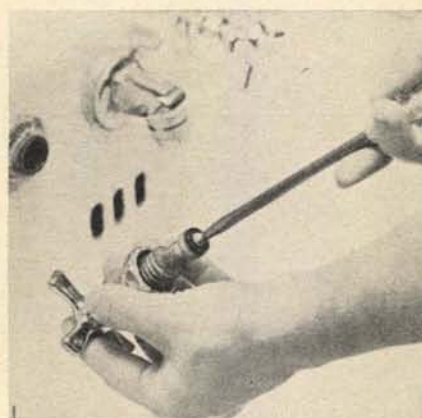
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When nut is removed, turn faucet handle as though to turn on water, which causes stem unit to unscrew. Large, coarse threads on stem are ones that raise and lower face of valve.



Use screw driver to remove screw that holds washer in place. If screw is tight, tap on end of driver with hammer to "shock" threads loose. Do not let driver slip so that blade gouges your hand.



Old washer is removed after screw is out. Removal of the washer may require the use of a knife blade to pry it out of its recess. Be careful.

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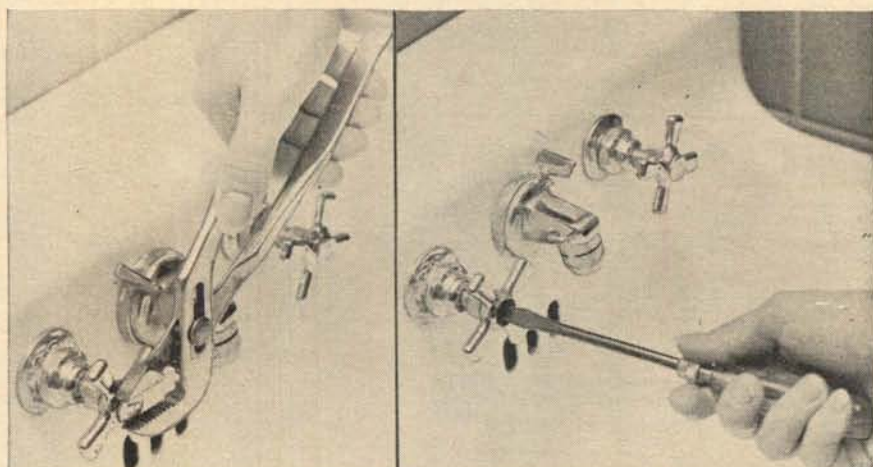
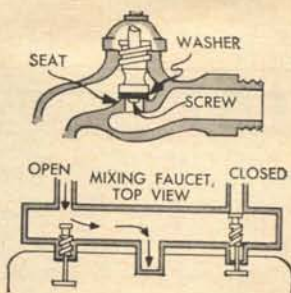


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Select washer of right size from assortment purchased, insert screw, then replace.



If water leaks around stem of faucet, and tightening large hex-shape nut does not stop leak, new packing is required. Remove cap in center of handle that covers screw, then remove screw and tap on handle to remove it. Generally wood or plastic handle of screw driver can be used as "mallet" to loosen handle.



Large nut next is removed, revealing rings of "packing". These packing rings also are available in an assortment in a box at hardware stores. Dig out and remove old rings, polish stem with steel-wool pad.



Wipe stem clean, then slip on new packing rings. Turn on hex nut, tighten it only enough to stop any leak around stem. Over-tightening will make stem hard to turn, prevents future tightening.

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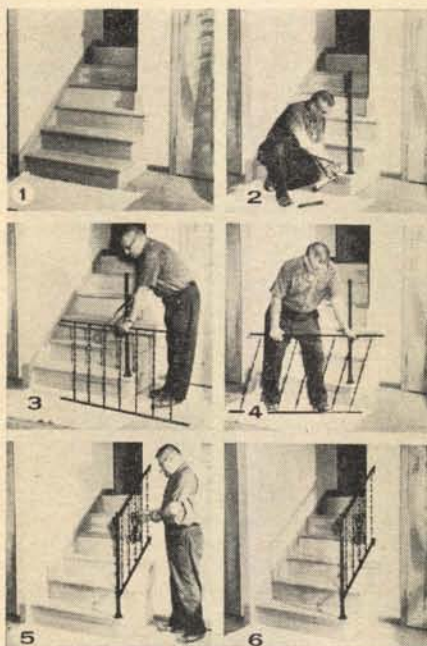


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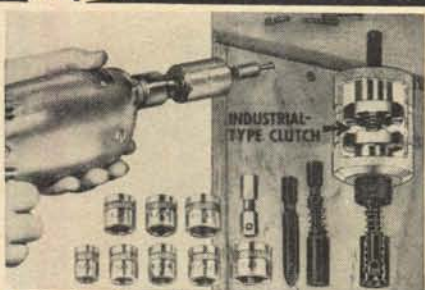
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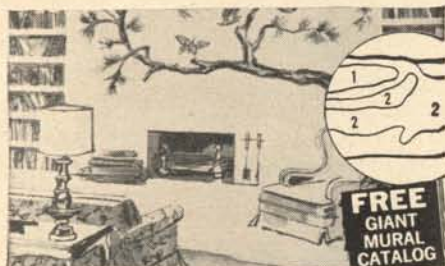
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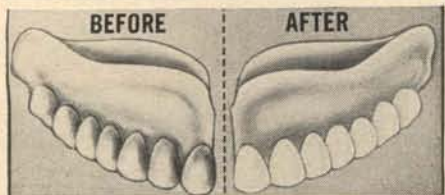
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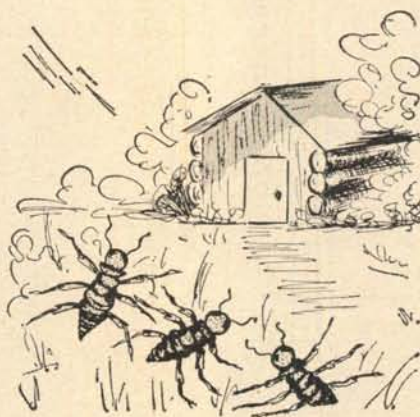
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WORKBENCH RESEARCH DEPARTMENT

EACH ISSUE IN THIS COLUMN WE WILL CHOOSE QUESTIONS ON HOME AND SHOP SUBJECTS FROM LETTERS SENT TO US. ONLY THOSE QUESTIONS WHICH HAVE WIDE APPEAL WILL BE ANSWERED HERE. QUESTIONS ON SPECIALIZED SUBJECTS WILL BE ANSWERED BY INDIVIDUAL LETTER FROM THE RESEARCH EDITOR'S DESK.



may be immune or highly resistant, any wood construction close to the ground be treated, and appropriate termite stops be used, as well.

Dear Research Department:

Am I correct in assuming that acoustical ceiling tile may be attached to the ceiling by adhesive as well as by stapling or nailing? Which do you consider a better way? Miss N. V. A., Kansas.

Dear Research Department:

We have no termite problem in our house, at least as far as we know, but we are considering building a vacation cabin and have been wondering if there is any naturally termite resistant wood that we might use, and thus get a real head start on this problem. Mr. D. T. V., Tenn.

Dear Miss N. V. A.:

Mechanically, that is, which holds the tile on better, it would be pretty much of a toss-up between stapling and using the special tile adhesive. One or the other system of attachment is used depending upon the particular circumstances. Both are effective in holding the tile in place on the ceiling. An overshadowing factor came to light recently, when results of a series of flame spread tests were published by Underwriters Laboratories.

These tests were made as the result of a disastrous fire in a hospital several months ago.

The report indicated that the adhesive used to attach the tile to the ceiling was the chief factor in the unusually rapid spread of the fire. Authorities pointed out that the flame-spread rating, fuel-contributing factor and the smoke rating of the ceiling would have been considerably less if the tile had been attached mechanically rather than by adhesive.

Since this painstaking investigation seems so conclusive, we can only recommend that ceiling tile be fastened with staples or nails. This will help to avoid a recurrence of the situation reported above.

Dear Mr. D. T. V.:

There are only a very limited number of woods grown in the United States that offer any marked degree of natural resistance to attack by termites. According to tests made by the Forest Products Laboratory of the Department of Agriculture, the close-grained heartwood of California redwood and bald cypress has, as they termed it, some resistance, especially when used above ground. But termites have been known to attack these woods at times. The very resinous heartwood of southern yellow pine is practically immune to termites, but unfortunately wood of this character is not available in reasonable quantities or is not suitable for many uses.

We would suggest that even if you feel that the wood you are using



Dear Research Department:

On a house to which we are doing some rather extensive interior and exterior redecorating, my wife and I are considering either a natural finish for some exterior woodwork-paneling around the doorway, or leaving it uncoated to weather. Do you have any advice as to kinds of woods, if left unfinished; and finishes we might use and their average life? Most of the natural finish I have seen on exterior woodwork has been pretty seedy looking. Dr. D. E. G., Ohio.

Dear Dr. D. E. G.:

Natural finishes that are transparent enough to allow the grain of the wood to show on woodwork exposed to the weather are much less durable and require more frequent renewal than house paints. Where these surfaces are fully exposed to the effects of sun and rain, the natural finish may need renewal as often as once a year. Yet often it is felt that the style of the home demands this woodwork style and is worth this extra effort of upkeep. Very likely the poor finishes you have seen just have not had the proper upkeep. Available natural finishes can be classified into two types: surface coating finishes and penetrating finishes. Among the more common of the surface coatings are varnishes and synthetics. These form a continuous coating that is resinous in nature and usually glossy. After being renewed several times these surface coatings generally crack badly or become opaque in spots then often curl or scale. Then it is necessary to remove the residue completely with varnish remover before reapplication of a finish. Even so, such finishes are used for front doors and other small areas, seldom for large areas, such as siding.

The penetrating finishes include oils, sealers, and water repellants.

These finishes soak into the wood and do not leave a film of any measurable thickness on the surface of the wood. Nor do they produce a high gloss finish.

A typical oil finish is made by using boiled or raw linseed oil to which a small amount of liquid paint dryer has been added. Best way is to apply two coats at the outset, wiping off any excess that is not absorbed, renewing with a single coat when necessary.

Sealer-type finishes are handled in exactly the same way as the oils, but result in a bit more gloss than the oil. The water-repellant finishes usually contain wax and other nonvolatile ingredients and give to the wood an appearance similar to the oil finish. They penetrate the wood so well that it is normally not necessary to wipe off the excess. Some of the penetrating finishes contain a small amount of red or brown pigment. This aids durability, evens up the colors of the wood, prevents for a time the grayness that is characteristic of weathering, particularly if refinishing is delayed. Some commercial finishes contain a gray pigment to immediately give the appearance of weathering. Penetrating finishes are more commonly used on larger surfaces, will normally outlast considerably the surface coatings like varnish. Uncoated exterior woodwork isn't necessarily lacking in durability, if properly constructed of the right kinds of materials. Woods are best that weather with a minimum of cupping, twisting and checking. Among these are the following: nearly any variety of cedar, redwood, bald cypress. Edge-grain boards are preferred to flat grain; the thicker the board the better. Exclude boards containing pith and place flatgrained boards with the bark side out, if you can distinguish. Fastening weathered boards is very important: very tightly, using noncorrosive nails. Finally, design joints so as to prevent retention of moisture.

Dear Research Dept.:

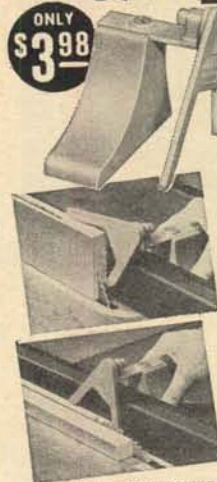
In order to keep birds or maybe squirrels from entering a fireplace chimney I can see the advantage of a wire mesh screen over the top. However, is there any real advantage from the standpoint of such a screen being a fire arrestor? Mr. M.K., Tulsa, Okla.

Dear Mr. M.K.:

A fireplace chimney is designed so that usually the sparks will go out before reaching the top of the chimney. The smoke shelf also contributes to this effect. Occasionally,

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the wind may be stronger than usual, in just the right direction over the house roof to create an extra strong up-draft and live sparks will be pulled out. Though you may not know it, since few persons light a fireplace fire and then spend the next hour or so outside watching for sparks, more live sparks come out than is assumed.

Thus we would suggest such a screen is worth while, particularly since it can be made inexpensively out of quarter inch mesh or hardware cloth; a definite safety factor.



Dear Research Department:

I have a black-top driveway upon which are a number of oil spots from my car. Shortly I plan to resurface the asphalt with one of the cold liquid surfacing materials on the market. The directions on the can state that such oil spots should be removed first, but they don't tell how to do it without softening the asphalt. What would you suggest I do to clean up these spots without harming the drive? Mr. K. R. H., New York.

Dear Mr. K. R. H.:

There are, as you know, a number of solvents that will remove the oil, but also will soften the black-top. So these are not the answer, especially if poured on. However, you can moisten an old rag with lacquer thinner or gasoline, and with caution, wipe up large spots of oil. Do not use too wet a rag.

Next, we suggest obtaining a liquid solution called "Gunk," which may be obtained at reasonable price at auto supply stores. This can be obtained either full strength (and you add kerosene) or already mixed. Pour some of this on the oily spot and rub in with a rag. Then wash off with a hose. This material was developed to clean out the interiors of fabric covered airplanes, is fireproof, will not hurt the asphalt. As a matter of fact, it has been used with good results to clean ovens.

Dear Research Department:

Cellar walls of my home are cinder blocks. Several years ago I painted the basement walls with a good grade cement-base paint. Now I notice that coming through the paint are a number of rust spots. What are these from, and what can I do about it? Mr. A. V. O'D., Penna.

Dear Mr. A. V. O'D.:

Although you did not say so, we imagine that the cinder blocks used in your home were produced by a company who used metallic aggregates. This is quite common. After several years, the particles of iron or steel in the cinder block may be attacked by moisture, and the result you mention is apparent. Unfortunately, there is no simple remedy for this condition. We know of no cement paint that is a 100% sealant against these rust stains. The only procedure likely to conceal the rust spots is that of applying a cement plaster over the blocks. This should be troweled on to a thickness of one inch or more. As a rule, the rust oxides will not show through a plaster coat of this thickness. The cement plaster can be applied over the paint you now have on the wall.

Dear Research Department:

Recently I obtained several old chests that had evidently been stored for some time. The drawers have a disagreeable musty odor that taints anything that is put into them. Is there any way of removing this odor? Mrs. A. K. H., Colorado.

Dear Mrs. A. K. H.:

As a first step, and possibly the only treatment needed, suggest you dampen a cloth with white vinegar and scrub the interiors of the drawers. This generally eliminates the odors due to mildew, which often causes the musty odor. If this approach does not remove the offensive odor, we suspect that it then may be from the finishing material itself. Some finishes, when exposed to dampness for a long period of time, will develop such an odor as you describe. In this case, the only solution that we can recommend is to strip the finish to the bare wood and refinish.

Refinishing Clinic

(Continued from Page 34)

ening the color of the wood. These materials are caustic, so use them with care and wear rubber gloves. (The many problems encountered when using bleaches will be described in an article in a future issue.) After the bleached wood has dried thoroughly, sand the surfaces lightly and thoroughly to remove the bleach residue. Do not use water, as it will reactivate bleach.

After sanding, remove sanding dust with a vacuum or tack rag. Test your stain on one of the pieces that was removed from the piano to determine if the color is what you wish. Oil stains can be mixed to change colors, or colors-ground-in-oil can be added. It is easier to wash the wrong color stain from a small piece, than from a surface on the main cabinet of the piano. After getting the right color, apply it according to the manufacturer's instructions, then allow it to dry overnight. Clear finish is applied, the surfaces being sanded with wet-or-dry sandpaper between coats. The last step is to wipe down all surfaces with a damp cloth. △ △

Q. Have just removed the finish from a walnut table, but there is a water mark left where a plant ran over. How do I remove this stain? What is the best finish? What glue should I use on a loosened leg?

A. Brush on another coat of paint remover. Add powdered detergent to warm water and scrub off the

remover with steel wool and the detergent-water solution. Get some oxalic acid crystals at a drug or paint store and add to water in the ratio of about 1 lb. to the gal. Heat this solution (hot, but not boiling), and apply liberally with a cloth while the table top is still wet. Let stand about ten minutes, then rinse with cold water.

If the leg can be clamped properly, use a quality water-resistant glue; if the leg cannot be clamped, use a contact adhesive, such as Weldwood.

Q. We have a dining room suite about 45 years old with the original finish. The wood is quartered oak, in good repair, but the finish is checked, dull and dirty looking. Can you advise me how to refinish it in the original color?

A. Apply a liberal coat of paint remover. Let it work for about 15 minutes. Remove bulk of softened finish with a scraper and burlap or rough cloth. Apply another generous coat of remover. Repeat the first operation. If most of the finish has not now been removed, scrub the entire surface with lacquer thinner and steel wool. A stiff-bristled brush dipped in the thinner is good for cleaning grooves and carvings. Wipe the surfaces dry with cloths as you proceed. The thinner must be wiped off thoroughly before it is allowed to dry. Application of a clear finish will give you a color and finish somewhat lighter than the original. If you want it as dark as the original, use stain to restore the color.

Book Reviews

FUN WITH A SAW
By R. J. DeCristoforo
McGraw-Hill Publisher
327 W. 41st. St.,
New York 36, N. Y. \$5.95

This book is a comprehensive treatment of the radial-arm saw, sets out to prove that this tool really is a one-tool shop. Every possible operation on the saw is covered in this book, the descriptions being supplemented by illustrations.

Mr. DeCristoforo brings 20 years' experience to the how-to field, having contributed hundreds of articles to magazines, including WORKBENCH.

METHODS OF DYEING WITH VEGETABLE DYES AND OTHER MEANS
by F. Whipple Pope
North Bennet Industrial School
39 North Bennet St., Boston 9, Mass. \$2.00

This unusual 36-page volume is the result of four years' experimenting with elaborate dyeing formulae obtained from historical sources. In the book are described methods and materials for dyeing all types of natural fibers, using natural materials. Blueberries, dandelions, water lilies, even alum and metals are used to produce antique and historical colors. The book is of special interest to handicraft groups and those who do their own spinning and weaving.

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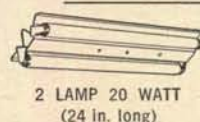
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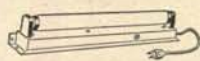
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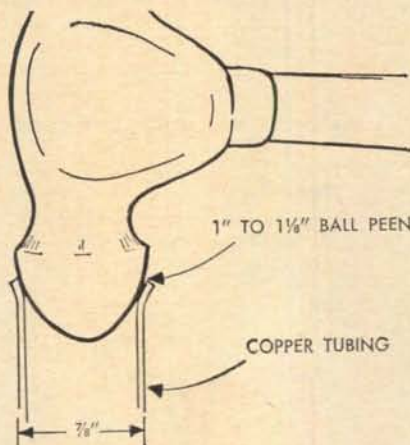
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Making Candle Cups



An improvement over the method shown to make candle cups (Jan.-Feb. issue) is indicated in the accompanying sketch. A wooden, rawhide or plastic mallet is used to tap against the hardened face of the ball-peen hammer to prevent the hazard of flying chips of steel. After the length of tubing has been flared the desired amount, it is hacksawed to length.

Frank Novotny, Montgomery, Minn.

WORKBENCH SHOP TIPS

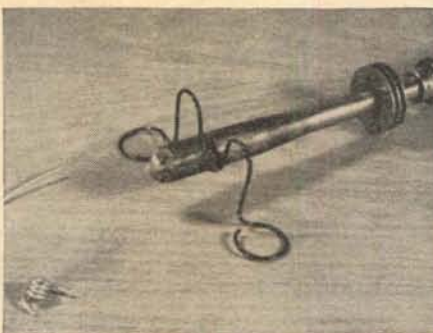
Parts Cleaner



When you work on your car, power lawn mower or any machinery there is need for cleaning some part or parts in solvent. An ideal container for this job is a plastic "litter bag," such as fits under the instrument panel of your car. The container is deep enough to permit cleaning fair-sized parts, and the plastic is readily cleaned of grease and solvent.

Arthur Tanner, Poughkeepsie, N. Y.

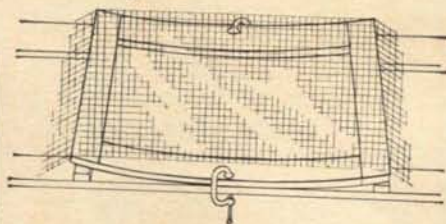
Soldering-Iron Stand



Wire clothes hanger is bent easily to shape shown to support the hot end of a soldering iron above your work or bench top. The rings make the stand stable, but for extra rigidity, tape them to the bench top.

R. J. DeCristoforo, Los Altos, Calif.

Tight Screen Wire



You can be sure of a tight, smooth screen if the following method is used when attaching the wire: Slip a length of 2-in. lumber under the end crosspieces of the screen frame, then fit a clamp at the center of each of the side members and tighten enough to slightly bow the frame. Attach the screen wire to the end members, then release the clamps. The frame will straighten and draw the wire tight. Fasten the sides of the screen wire and the job is done.

Howard Moody, Upper Jay, N. Y.

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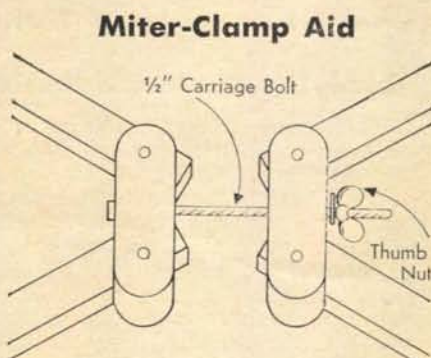
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PLASTIC ARTS STUDIO
 3403 S. MADISON, DEPT. 3
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When I made the mitering clamp that appeared in the Nov.-Dec., 1961 issue I improved the design to eliminate the need for a separate clamp. The two pivot blocks are made thicker than shown and a 1/2-in. hole is drilled through the center of each. A 1/2-in. carriage bolt is fitted through the blocks, the shouldered head preventing the bolt from turning, and a thumb nut is fitted on the bolt. Simply tightening the nut on the bolt draws the halves of the clamp together.

Frank Novotny, Montgomery, Minn.

Water-thinned latex paints do not require a primer when applied to new plaster or surfaces containing cement or mortar because they do not react with the alkali in these substances. Latex paints should not be used on bare wood because the water may raise the grain. National Paint, Varnish and Lacquer Assoc.

Wood-Banding Jig



You can do a neat and precise job of applying wood tape to plywood edges, (or for all similar applications), by making a simple U-shape jig that fits snugly over the work edge. After the contact cement has been applied and is dry, start the band at one end and slip the jig in place. Press down firmly as you move forward and the jig will assure a firm contact and align the band with the edge.



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Workbench Shop Tips

Applying Contact Adhesive

To assure a continuous film of adhesive on dry, porous wood it sometimes is necessary to apply several coats. To reduce the amount of adhesive required, as well as the time, I spray or brush on a light coat of sealer or shellac. This permits the use of just one coat of contact adhesive for applying plastic laminate, and the sealer does not interfere with the bond.
Coke Kimbrough, Prairie Village, Ks.

Small-Parts "Pourer"



When looking for a particular item in a collection of small parts, the usual habit is to pour them out on a newspaper. After finding the part, the newspaper is shaped into a trough and the parts are poured back into the container. A more efficient and long-lasting device can be shaped from sheet metal, as indicated. The parts are sorted in the tray end, then are poured through the funnel-shape at the end.
George F. Burnley, Alameda, Calif.

Plastic Sponges in the Workshop

Plastic sponges have innumerable uses in the workshop. Use them to pad vise jaws when finished work must be clamped; as sandpaper backing for sanding irregular surfaces. When screen must be painted, apply the paint with a plastic sponge. The paint can be applied sparingly and the screen mesh won't fill with paint. To enable you to get a better grip on the handle of a screwdriver, wrap it with a small sponge securing it with rubber bands. The sponge will absorb moisture from your hands that would otherwise cause slippage.
John A. Comstock, Wellsboro, Pa.

Up-Dating A Table

Have an old table around that has a top that is in first-class condition but with legs that "date" it? Pick up a set of metal or wooden legs at your building-supply dealer—



they come complete with brackets and instructions—and replace the old ones. Legs can be round or square, depending on style of the table or your personal preference.
Coke Kimbrough, Prairie Village, Kan.

In The Next Issue . . .

Kit-Built Garden Light
Hepplewhite Dining Table
Portable Tool Cabinet
First Aid For Rusty Tools
The New Model Shop

Zone Your Mail

If you live in one of the 106 cities in the United States which use delivery zone numbers for mail delivery, please include your zone number in all correspondence with WORKBENCH. And wherever you live, your mail will be delivered faster to correspondents in those 106 cities when the address includes the zone number. Ask your correspondent for his zone number. A zone number is part of the address, specific, easy to read, simplifies handling and speeds delivery of mail. Ask your local post office if your city is one of the 106 which use delivery zone numbers. If it is, ask for your zone number. Use it on printed stationery, cards, advertisements and in your return address. The zone number of WORKBENCH is 11. So our complete address is WORKBENCH, 543 Westport Road, Kansas City 11, Missouri. Remember: You get better mail service by using zone numbers. Zone all mail.

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- 25c Rudolph Reindeer brooches, 2c each.

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